Panasonic®

Operating Instructions

DVD Home Theater Sound System

Model No. **SC-HT440**

U.S.A. and Canada

Wireless-ready surround sound

page 6

Optional wireless surround speaker connection.

Advanced progressive scan

page 7

Provides a smoother and sharper image.

High-performance sound effects

page 26

Sound quality enhancement, Dolby Pro Logic II and more.

Region number
The player plays DVD-Video marked with labels containing the region number "**1**" or "**ALL**".

Example:

DVD AUDIO / VIDEO

COMPACT disc DIGITAL VIDEO

RAM COMPATIBLE PLAYER

U.S.A. and Canada

As an ENERGY STAR® Partner,※ Panasonic has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

※ For Canada only: The word "Participant" is used in place of the word "Partner".

Before connecting, operating or adjusting this product, please read the instructions completely.
Please keep this manual for future reference.

If you have any questions contact
In the U.S.A.: 1-800-211-PANA (7262)
In Canada: 1-800-561-5505

P PC

RQT8593-1P

Dear customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully.

- **Unless otherwise indicated, illustrations in these operating instructions are for U.S.A. and Canada.**
- **Operations in these instructions are described mainly with the remote control, but you can perform the operations on the main unit if the controls are the same.**

System	SC-HT440
Main unit	SA-HT440
Front speakers	SB-FS440
Center speaker	SB-PC640
Surround speakers	SB-FS441
Subwoofer	SB-W440

CAUTION!

THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE, DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

THE FOLLOWING APPLIES ONLY IN THE U.S.A.

FCC Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any unauthorized changes or modifications to this equipment would void the user's authority to operate this device.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party:
Panasonic Corporation of North America
One Panasonic Way
Secaucus, NJ 07094
Telephone No.: 1-800-211-7262

CAUTION!

- **DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.**
- **DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.**
- **DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.**
- **DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.**

The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.

THE FOLLOWING APPLIES ONLY IN THE U.S.A. AND CANADA

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) **U.S.A. and Canada**
   Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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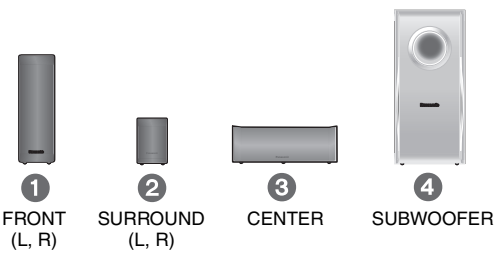
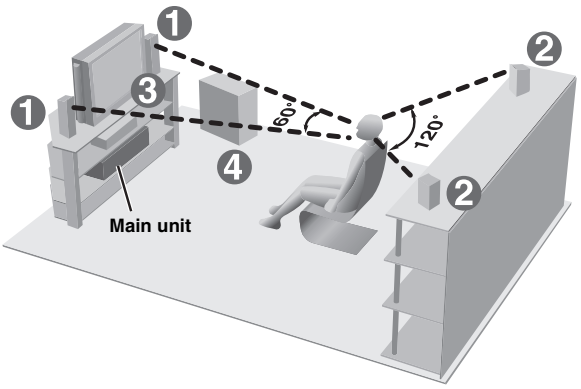
STEP 1 Positioning the speakers

How you set up your speakers can affect the bass and the sound field. Note the following points:
- Place speakers on flat secure bases.
- Placing speakers too close to floors, walls, and corners can result in excessive bass. Cover walls and windows with thick curtains.
- Left and right speakers are interchangeable, but front and surround speakers are not.



Setup example
Place the front, center, and surround speakers at approximately the same distance from the seating position.
The angles in the diagram are approximate.



●Use only supplied speakers
Using other speakers can damage the unit, and sound quality will be negatively affected.
- Set the speakers up on an even surface to prevent them from falling. Take proper precautions to prevent the speakers from falling if you cannot set them up on an even surface.

Main unit

Note
- Keep your speakers at least 10 mm ($^{13}/_{32}$″) away from the system for proper ventilation.
- To allow for proper ventilation and to maintain good airflow around the main unit, position it with at least 5 cm (2″) of space on all sides.
- Do not block the ventilation holes of the main unit.

Center speaker
- Vibration caused by the center speaker can disrupt the picture if it is placed directly on the television. Put the center speaker on a rack or shelf.
- To prevent the speakers from falling, do not place directly on top of the television.

Subwoofer
Place to the right or left of the television, on the floor or a sturdy shelf so that it will not cause vibration. Leave about 30 cm ($11^{13}/_{16}$″) from the television.

Caution
Do not touch the netted area of the speakers.

e.g. Surround speaker

Notes on speaker use
- You can damage your speakers and shorten their useful life if you play sound at high levels over extended periods.
- Reduce the volume in the following cases to avoid damage:
  – When playing distorted sound.
  – When the speakers are reverberating due to a record player, noise from FM broadcasts, or continuous signals from an oscillator, test disc, or electronic instrument.
  – When adjusting the sound quality.
  – When turning the unit on or off.

If irregular coloring occurs on your television
The front and center speakers are designed to be used close to a television, but the picture may be affected with some televisions and setup combinations.
If this occurs, turn the television off for about 30 minutes.
The demagnetizing function of the television should correct the problem. If it persists, move the speakers further away from the television.

Caution
- **The main unit and supplied speakers are to be used only as indicated in this setup. Failure to do so may lead to damage to the amplifier and/or the speakers, and may result in the risk of fire. Consult a qualified service person if damage has occurred or if you experience a sudden change in performance.**
- **Do not attempt to attach these speakers to walls using methods other than those described in this manual.**

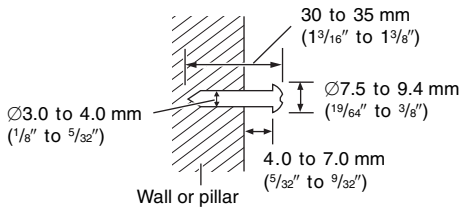
Speaker installation options

■ *Attaching to a wall*

You can attach all of the speakers to a wall.

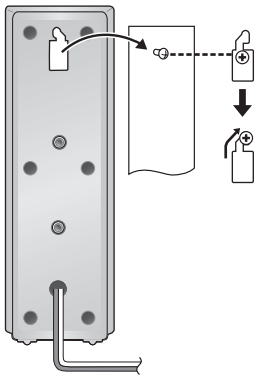
- The wall or pillar on which the speakers are to be attached should be capable of supporting 10 kg (22 lbs) per screw. Consult a qualified building contractor when attaching the speakers to a wall. Improper attachment may result in damage to the wall and speakers.

① Drive a screw (not included) into the wall.

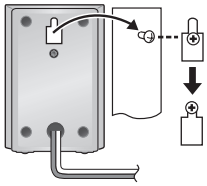


② Fit the speaker securely onto the screw(s) with the hole(s).

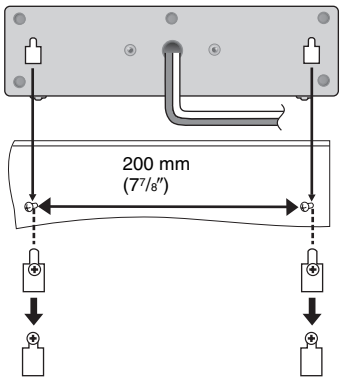
Front speaker



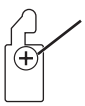
Surround speaker



Center speaker



e.g.



In this position, the speaker will likely fall if moved to the left or right.

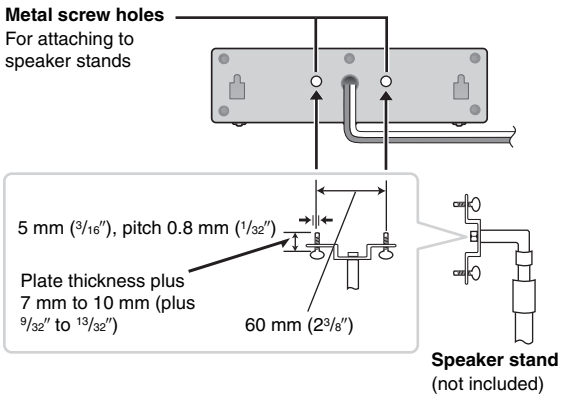
Move the speaker so that the screw is in this position.

■ *Fitting speaker stands* (not included)

Ensure the stands meet these conditions before purchasing them. Note the diameter and length of the screws and the distance between screws as shown in the diagram.

- The stands must be able to support over 10 kg (22 lbs).
- The stands must be stable even if the speakers are in a high position.

e.g. **Center speaker**

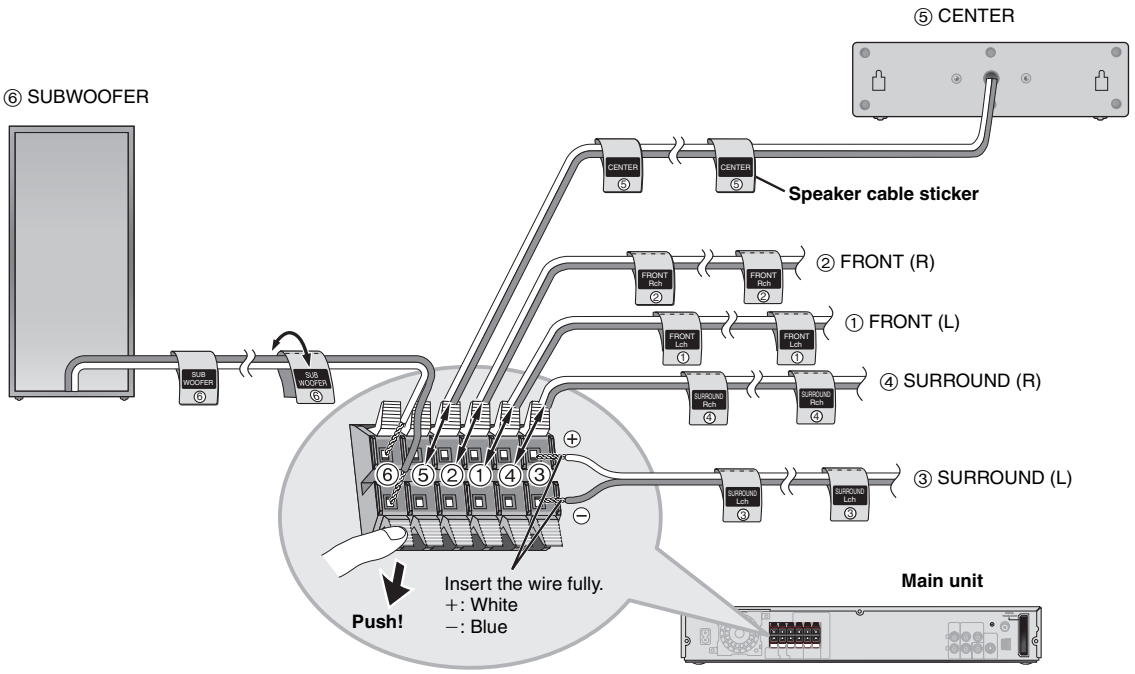

Metal screw holes
For attaching to speaker stands
5 mm (3/16″), pitch 0.8 mm (1/32″)
Plate thickness plus 7 mm to 10 mm (plus 9/32″ to 13/32″)
60 mm (2 3/8″)
Speaker stand
(not included)

STEP 2 Speaker connections

- Attach the speaker-cable stickers to make connection easier.
- **Be careful not to cross (short-circuit) or reverse the polarity of the speaker wires as doing so may damage the speakers.**

2 sheets of speaker cable stickers

The illustration shows the model for U.S.A. and Canada.



For U.S.A. and Canada only

Set your surround sound free! Optional Panasonic wireless accessory (e.g. SH-FX60)

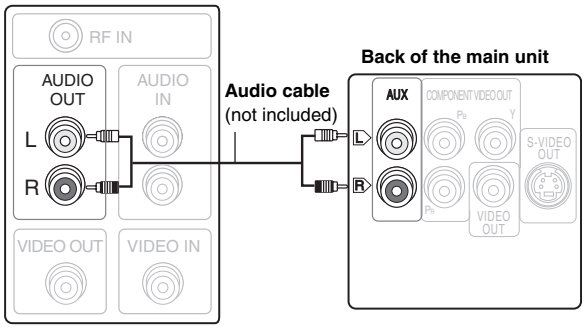
You can enjoy surround speaker sound wirelessly when you use the optional Panasonic wireless accessory (e.g. SH-FX60).
For details, please refer to the operating instructions for the optional Panasonic wireless accessory.

STEP 3 Audio and video connections

- **Do not connect through the video cassette recorder.**
  Due to copy guard protection, the picture may not be displayed properly.
- Turn the television off before connecting, and refer to the television's operating instructions.

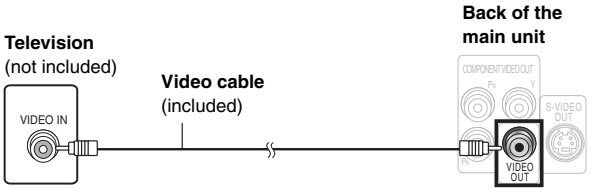
Video cable

Basic audio connection

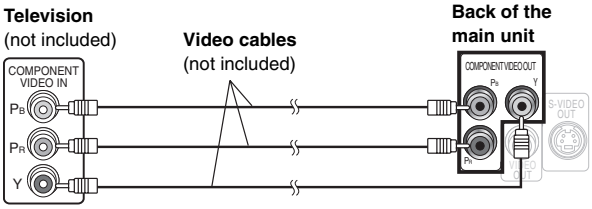


- This audio connection will enable you to play audio from your television through your home theater system. Refer to "Operating other equipment" (➜ page 28).

Basic video connection

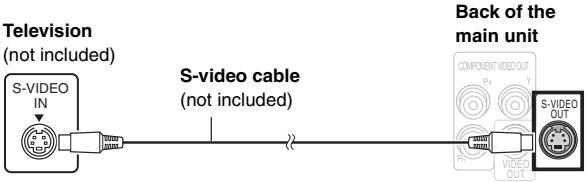


- **COMPONENT VIDEO OUT**



Other video connections for improved picture quality

- **S-VIDEO OUT**



Using the S-VIDEO OUT terminal

The S-VIDEO OUT terminal achieves a more vivid picture than the VIDEO OUT terminal by separating the chrominance (C) and luminance (Y) signals. (Actual results depend on the television.)

Using the COMPONENT VIDEO OUT terminals

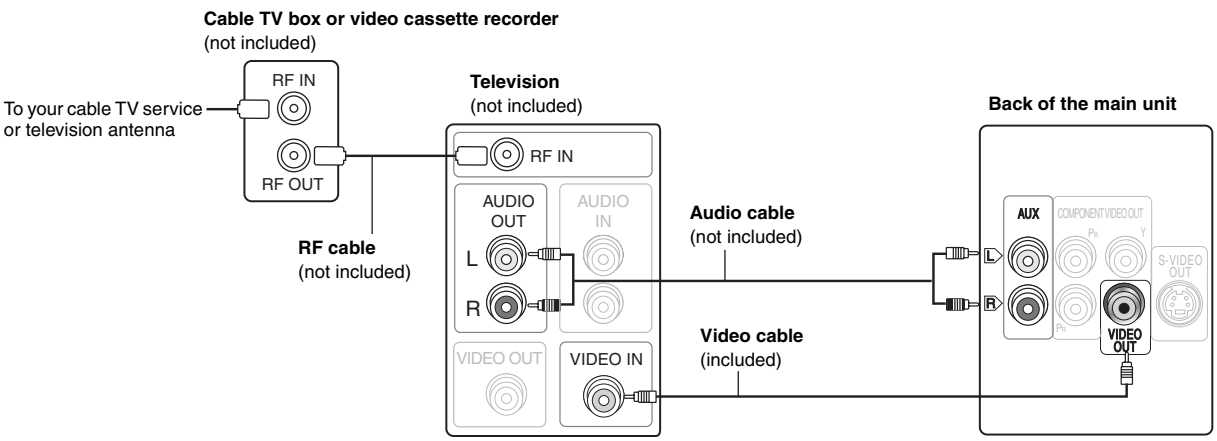
The COMPONENT VIDEO OUT terminals provides a purer picture than the S-VIDEO OUT terminal. These terminals can be used for either interlaced or progressive output. Connection using these terminals outputs the color difference signals (P_B/P_R) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colors.

- The description of the component video input terminals depends on the television or monitor (e.g. $Y/P_B/P_R$, Y/B-Y/R-Y, $Y/C_B/C_R$). Connect to terminals of the same color.
- After making this connection, select "Darker" from the "Black Level Control" in the "Video" tab (➜ page 22).

To enjoy progressive video

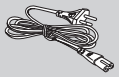
- Connect to a progressive output compatible television.
- Set "Video Output Mode" to "480p", and then follow the instructions on the menu screen (➜ page 19, Picture Menu).
- All Panasonic televisions that have 480p input connectors are compatible. Consult the manufacturer if you have another brand of television.

■ *Cable TV box or video cassette recorder connection*



STEP 4 Radio and AC cord connections

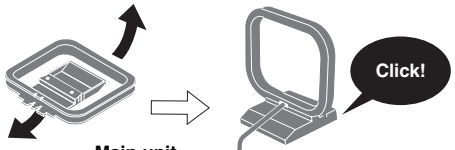
AM loop antenna | **FM indoor antenna** | **AC power supply cord** U.S.A. and Canada | Others | **Power plug adaptor** Areas except U.S.A. and Canada



- **Connect the AC power supply cord after all other connections are complete.**
- **Using an outdoor antenna (optional) (➜ page 25).**

The illustration shows the model for U.S.A. and Canada.

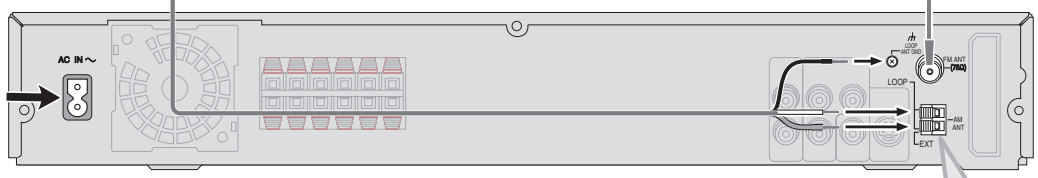
AM loop antenna
Stand the antenna up on its base.
Place the antenna where reception is best.
Keep loose antenna cable away from other wires and cables.



FM indoor antenna
Affix this end of the antenna where reception is best.

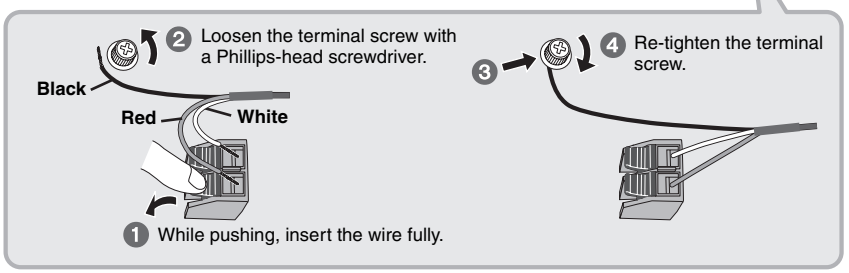
Adhesive tape

Main unit



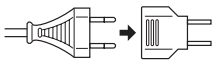
AC power supply cord

To household AC outlet



For areas except U.S.A. and Canada

- **If the power plug does not fit your AC outlet**
  Use the power plug adaptor (included).



If it still does not fit, contact an electrical parts distributor for assistance.

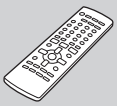
Conserving power

The main unit consumes a small amount of power, even when it is turned off (For U.S.A. and Canada: approx. 0.4 W or for other areas: approx. 0.9 W). To save power when the unit is not to be used for a long time, unplug it from the household AC outlet.
You will need to reset some memory items after plugging in the unit.

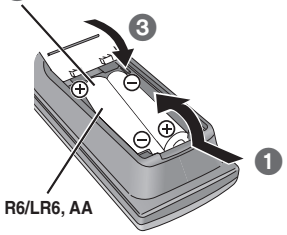
Note

The included AC power supply cord is for use with this unit only. Do not use it with other equipment. Also, do not use cords for other equipment with this unit.

STEP 5 Preparing the remote control

Remote control  **Batteries**

2 Insert so the poles (+ and −) match those in the remote control.



- Do not use rechargeable type batteries.

Do not:

- mix old and new batteries.
- use different types at the same time.
- heat or expose to flame.
- take apart or short circuit.
- attempt to recharge alkaline or manganese batteries.
- use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can severely damage the remote control.

Remove the batteries if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

■ *Use*

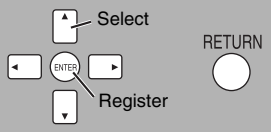
Aim at the display (➜ page 9), avoiding obstacles, at a maximum range of 7 m (23 feet) directly in front of the unit.

STEP 6 Performing QUICK SETUP

The QUICK SETUP screen assists you to make necessary settings.

To display the picture from the main unit, turn on your television and change its video input mode (e.g. VIDEO 1, AV 1, etc.).

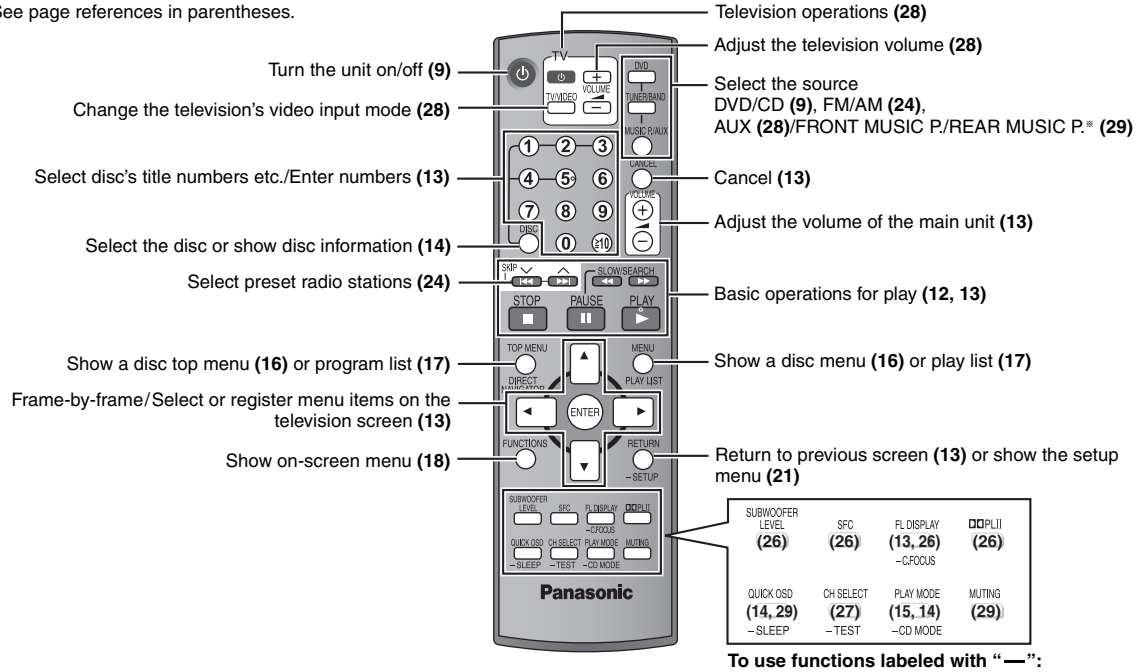
- To change your television's video input mode, refer to its operating instructions.
- This remote control can perform some basic television operations (➜ page 28).

1	2	3	4	5	6
					
Turn on the unit.	**Select "DVD/CD".**	**Press and hold to show the QUICK SETUP screen.**	**Follow the messages and make the settings.**	**Press to finish QUICK SETUP.**	**Press and hold to exit.**

To change these settings later
Select "QUICK SETUP" in the "Others" tab (➜ page 22).

Control reference guide

See page references in parentheses.


Television operations (28)
Adjust the television volume (28)
Turn the unit on/off (9)
Select the source DVD/CD (9), FM/AM (24), AUX (28)/FRONT MUSIC P./REAR MUSIC P.* (29)
Change the television's video input mode (28)
Select disc's title numbers etc./Enter numbers (13)
Cancel (13)
Adjust the volume of the main unit (13)
Select the disc or show disc information (14)
Select preset radio stations (24)
Basic operations for play (12, 13)
Show a disc top menu (16) or program list (17)
Show a disc menu (16) or play list (17)
Frame-by-frame/Select or register menu items on the television screen (13)
Show on-screen menu (18)
Return to previous screen (13) or show the setup menu (21)
SUBWOOFER LEVEL (26)
SFC (26)
FL DISPLAY (13, 26)
C.FOCUS
PLII (26)
QUICK OSD (14, 29)
SLEEP
CH SELECT (27)
TEST
PLAY MODE (15, 14)
CD MODE
MUTING (29)

To use functions labeled with "—":
Press and hold the button for at least 2 seconds.

Standby/on switch [POWER ⏻/I]
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power. **(12)**

MUSIC PORT
Connect an external device **(29)**

SURROUND MUSIC
Equalizing the sound **(12)**

I◀◀/◀◀, ▶▶/▶▶I / ∨ TUNING ∧
Skip or slow-search play **(12)**/
Select the radio stations **(24)**

Display

▲ OPEN/CLOSE
Open/Close the disc drawer **(12)**

DISC EXCHANGE
Open the disc drawer to exchange the disc in the play position **(12)**

DISC SKIP
Skip to the next disc tray **(12)**

Phones
Connect headphones **(29)**

5 DISC SELECTOR
Select the disc tray **(12)**

■ / –TUNE MODE / —FM MODE
Stop playing **(12)**/
Select the tuning mode **(24)**
Adjust the FM reception condition **(24)**

► / MEMORY
Play discs **(12)**/Memorize the receiving radio stations **(24)**

VOLUME
Turn up/down the volume **(12)**

SELECTOR (24)
DVD/CD→FM→AM→AUX→FRONT MUSIC P.→ REAR MUSIC P.*→Return to DVD/CD

*Refer to page 29, Using the Music Port.

Discs that can be played

Operations in these instructions are described mainly with formats. Icons such as DVD-V show the formats.

DVD VIDEO DVD VIDEO	**DVD-Video** DVD-V —
DVD AUDIO	**DVD-Audio** DVD-A DVD-V ● DVD-V Some DVD-Audio discs contain DVD-Video content. To play DVD-Video content, select “Play as DVD-Video” in Other Menu (➜ page 20).
COMPACT disc DIGITAL VIDEO COMPACT disc SUPER VIDEO	**Video CD** VCD ● Including SVCD (Conforming to IEC62107)
DVD RAM RAM4.7	**DVD-RAM** DVD-VR JPEG ● DVD-VR Recorded with devices using Version 1.1 of the Video Recording Format (a unified video recording standard), such as DVD video recorders, DVD video cameras, personal computers, etc. ● JPEG Recorded with Panasonic SD multi cameras or DVD video recorders using the DCF (Design rule for Camera File system) Standard Version 1.0.
DVD R R4.7 DVD RW	**DVD-R (DVD-Video)/DVD-RW (DVD-Video)** DVD-V ● Discs recorded and finalized* on DVD video recorders or DVD video cameras.
—	**+R (Video)/+RW (Video)** DVD-V ● Discs recorded and finalized* on DVD video recorders or DVD video cameras.
COMPACT disc DIGITAL AUDIO COMPACT disc DIGITAL AUDIO TEXT	**CD** CD WMA MP3 JPEG VCD ● This unit can play CD-R/RW recorded with the above formats. Close the sessions or finalize* the disc after recording. ● CD This unit is compatible with HDCD, but does not support the Peak Extend function (a function which expands the dynamic range of high-level signals). HDCD-encoded CDs sound better because they are encoded with 20 bits, as compared with 16 bits for all other CDs. ● WMA MP3 JPEG This unit also plays HighMAT discs. ● WMA This unit does not support Multiple Bit Rate (MBR: an encoding process for audio content that produces an audio file encoded at several different bit rates).

* A process that allows play on compatible equipment.

● It may not be possible to play all the above-mentioned discs in some cases due to the type of disc or condition of the recording.

■ *Discs that cannot be played*

DVD-RW version 1.0, DVD-ROM, CD-ROM, CDV, CD-G, SACD, DivX Video Discs and Photo CD, DVD-RAM that cannot be removed from their cartridge, 2.6-GB and 5.2-GB DVD-RAM, and “Chaoji VCD” available on the market including CVD, DVCD and SVCD that do not conform to IEC62107.

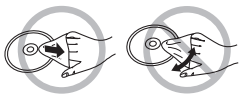
Note about using a DualDisc

- The digital audio content side of a DualDisc does not meet the technical specifications of the Compact Disc Digital Audio (CD-DA) format so playback may not be possible.
- Do not use a DualDisc in this unit as it may not be possible to insert it correctly and it may get scratched or scraped.

Disc caution

■ *To clean discs*

Wipe with a damp cloth and then wipe dry.



■ *Disc handling precautions*

- Do not attach labels or stickers to discs. This may cause disc warping, rendering it unusable.
- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, liquids which prevent static electricity, or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not use the following discs:
  - Discs with exposed adhesive from removed stickers or labels (rented discs, etc).
  - Discs that are badly warped or cracked.
  - Irregularly shaped discs, such as heart shapes.

Maintenance

Clean this unit with a soft, dry cloth.

- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using chemically treated cloth, carefully read the instructions that came with the cloth.

Do not use commercially available lens cleaners as they may cause malfunction. Cleaning of the lens is generally not necessary although this depends on the operating environment.

Before moving the unit, ensure the disc trays are empty. Failure to do so will risk severely damaging the discs and the unit.

Product Service

1. **Damage requiring service**—The unit should be serviced by qualified service personnel if:
   (a) The AC power supply cord or AC adaptor has been damaged; or
   (b) Objects or liquids have gotten into the unit; or
   (c) The unit has been exposed to rain; or
   (d) The unit does not operate normally or exhibits a marked change in performance; or
   (e) The unit has been dropped or the cabinet damaged.
2. **Servicing**—Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorized servicing personnel.
3. **Replacement parts**—When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other hazards.
4. **Safety check**—After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

The servicer will require all components to service your system.
Therefore, should service ever be necessary, be sure to bring the entire system.

Product information

For product information or assistance with product operation:

In the U.S.A., refer to “Customer Services Directory” on page 33.

In Canada, contact the Panasonic Canada Inc. Customer Care Centre at 1-800-561-5505, or visit the website (www.panasonic.ca), or an authorized Servicentre closest to you.

In other areas, consult your dealer.

Glossary

Decoder
A decoder restores the coded audio signals on DVDs to normal. This is called decoding.

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multi-channel audio. A large amount of audio information can be recorded on one disc using this method.

DTS (Digital Theater Systems)
This surround system is used in many movie theaters around the world. There is good separation between the channels, so realistic sound effects are possible.

Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs.

Frame still and field still
Frames are the still pictures that go together to make a moving picture. There are about 30 frames shown each second.
One frame is made up of two fields. A regular television shows these fields one after the other to create frames.
A still is shown when you pause a moving picture. A frame still is made up of two alternating fields, so the picture may appear blurred, but overall quality is high.
A field still is not blurred, but it has only half the information of a frame still so picture quality is lower.

I/P/B
MPEG 2, the video compression standard adopted for use with DVD-Video, codes frames using these 3 picture types.
I: Intra coded picture
This picture has the best quality and is the best to use when adjusting the picture.
P: Predictive coded picture
This picture is calculated based on past I- or P-pictures.
B: Bidirectionally-predictive coded picture
This picture is calculated by comparing past and future I- and P-pictures so it has the lowest volume of information.

JPEG (Joint Photographic Experts Group)
This is a system used for compressing/decoding color still pictures. If you select JPEG as the storage system on digital cameras, etc., the data will be compressed to 1/10–1/100 of its original size. The benefit of JPEG is less deterioration in picture quality considering the degree of compression.

Linear PCM (pulse code modulation)
These are uncompressed digital signals, similar to those found on CDs.

MP3 (MPEG Audio Layer 3)
An audio compression method that compresses audio to approximately one tenth of its size without any considerable loss of audio quality.

Playback control (PBC)
If a Video CD has playback control, you can select scenes and information with menus.

Progressive/Interlaced
NTSC, the video signal standard, has 480 interlaced (i) scan lines, whereas progressive scanning uses twice the number of scan lines. This is called 480p.
Using progressive output, you can enjoy the high-resolution video recorded on media such as DVD-Video.
Your television must be compatible to enjoy progressive video.

Sampling frequency
Sampling is the process of converting the heights of sound wave (analog signal) samples taken at set periods into digits (digital encoding).
Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

WMA (Windows Media™ Audio)
WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.

1 Power on.

POWER

2 Select "DVD/CD".

SELECTOR

- Select "AUX" to enjoy video cassette recorder, television or cable TV programs. (Refer to page 7 for the necessary connections.)

3 Open the drawer and place the disc(s).

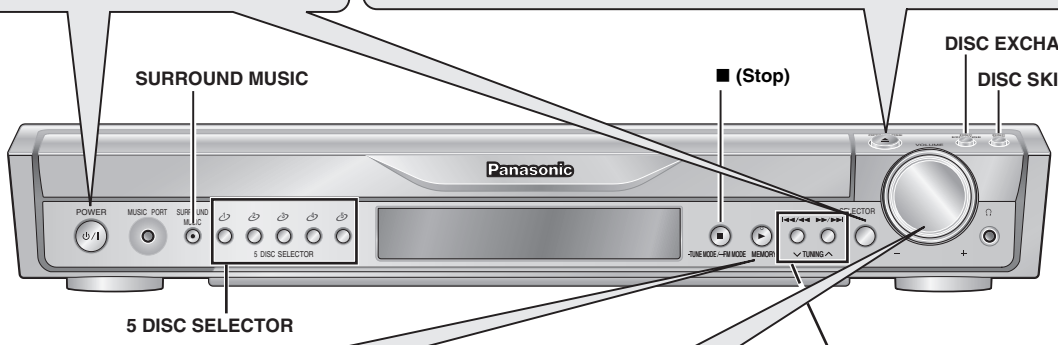
OPEN/CLOSE

- Load double-sided discs so the label for the side you want to play is facing up.
- To load discs on the other trays, press [DISC SKIP] on the main unit.
- Play will start from the disc in the front-left position of the tray.
- For DVD-RAM, remove the disc from its cartridge before use.

- Do not:
  - –load more than one disc per tray.
  - –touch the drawer or the carousel while they are in motion.
  - –rotate the carousel by hand.
  - –close the drawer by hand.

4 Close the drawer.

OPEN/CLOSE



5 Start play.

When the disc finishes playing

If the next disc does not start playing, select it with the 5 DISC SELECTOR buttons.

- You can also select the disc using the remote control (➜ page 14, Checking the disc type in each tray).

To change the sound quality ➜ page 26

6 Adjust the volume.

VOLUME

– +

Press to skip.
Press and hold to

– search during play
– start slow-motion play during pause **(Motion picture part)**

- Press [►] (Play) to start normal play.

I◄◄/◄◄ ►►/►►I

Using the main unit

Equalizing the sound — SURROUND MUSIC

- The sound fills the room, and comes from all directions with equal intensity, regardless of your orientation within the room.
- The indicator on the button lights.

Skipping to the next disc tray — DISC SKIP

- **While the drawer is closed**
  Each time you press the button, the carousel moves counter-clockwise by one tray.

Exchanging the disc in the play position — DISC EXCHANGE

- The drawer opens and the disc in the play position comes to the front-left position.
- Press the button again to play the disc after changing the disc in the front-left position.

Changing the other discs without interrupting play

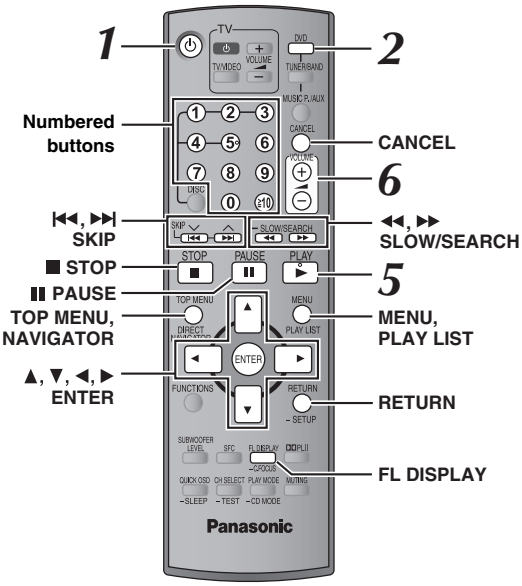
OPEN/CLOSE
↓
DISC SKIP
↓
Change the discs
↓
OPEN/CLOSE

- Each time you press [DISC SKIP], you can select the other trays.

Note

- Discs continue to rotate while menus are displayed. To preserve the unit's motor and your television screen, press [■] (Stop) when you are finished with the menus.
- Total title number may not be displayed properly on +R/+RW.

Using the remote control



Stop

STOP ■

The position is memorized while "RESUME" is on the display.
- Press [▶ PLAY] to resume.
- Press [■ STOP] again to clear the position.

Pause

PAUSE II

- Press [▶ PLAY] to restart play.

Skip

SKIP |◀◀ ▶▶|

—

- WMA MP3 JPEG
  [This feature does not work during program and random play (➜ page 15).]
  [▲, ▼]: **Group skip**
  [◀, ▶]: **Content skip**

Search (during play)

Slow-motion (during pause)

SLOW/SEARCH ◀◀ ▶▶

- Up to 5 steps.
- Press [▶ PLAY] to start normal play.
- VCD Slow-motion: forward direction only.

Frame-by-frame (during pause)

DVD-A (Motion picture part) DVD-VR DVD-V VCD

- VCD Forward direction only.

On-screen item select

Select / ENTER / Register

—

Enter number

1 2 3 / 4 5 6 / 7 8 9 / 0 ≧10

DVD-VR DVD-A DVD-V VCD CD
e.g. To select 12:
[≧10] ➜ [1] ➜ [2]

VCD with playback control
Press [■ STOP] to cancel the PBC function, and then press the numbered buttons.

ENTER

WMA MP3 JPEG
e.g. To select 123:
[1] ➜ [2] ➜ [3] ➜ [ENTER]

CANCEL

- Press [CANCEL] to cancel the number(s).

Disc menu

TOP MENU / DIRECT NAVIGATOR

DVD-A DVD-V
Shows a disc top menu.

DVD-VR
Press the button to show the programs (➜ page 17).

MENU / PLAY LIST

DVD-V
Shows a disc menu.

DVD-VR
Press the button to show a play list (➜ page 17).

RETURN

VCD with playback control
Shows a disc menu.

Return to previous screen

RETURN

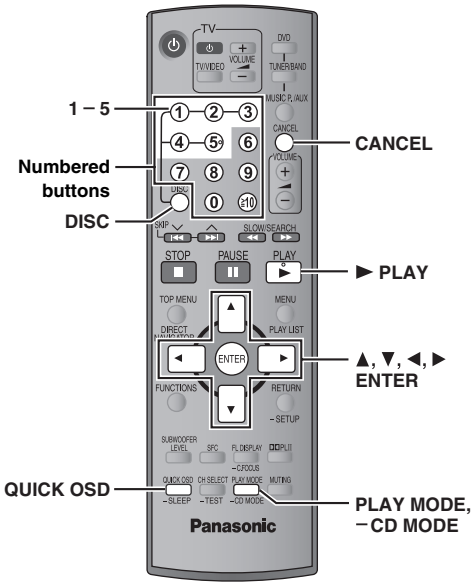
—

Main unit display

FL DISPLAY

DVD-VR DVD-A DVD-V VCD CD WMA MP3
Time display
↔Information display
(e.g. DVD-VR Program number)

JPEG
When Slideshow (➜ page 18) is on:
SLIDE↔Contents number
When Slideshow is off:
PLAY↔Contents number



Checking the disc type in each tray

DISC

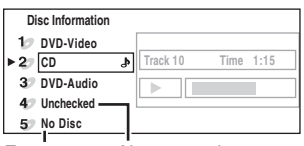
You can select the disc after checking the discs loaded with the Disc information screen.

- You can also select the disc directly with the 5 DISC SELECTOR buttons on the main unit.

1 Press [DISC] to show the Disc information screen.

- To exit the screen, press [DISC].

e.g.



2 Press the numbered buttons ([1] – [5]) to select the disc.

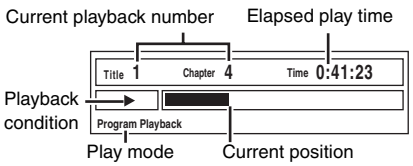
Displaying current playback condition

QUICK OSD

Press [QUICK OSD].

- To exit the screen, press [QUICK OSD].

e.g. DVD-V



Playing CDs sequentially

VCD CD WMA MP3

– CD MODE

This feature is very convenient if you want to play several music CDs sequentially. Make sure that applicable disc is in the play position before playing (➜ Checking the disc type in each tray, left).

While stopped

1 Press and hold [—CD MODE].

2 Press [► PLAY].

- If all loaded discs are DVDs or if other discs are unchecked, CD Mode does not work.
- HighMAT menus and Video CD playback control are disabled.
- You cannot turn CD Mode on or off during program or random play.
- If you want to play a DVD, press and hold [—CD MODE] again to cancel CD Mode. (CD Mode is also canceled when you switch the unit to standby, select another source, or change the disc in the play position.)
- DVD and JPEG are skipped without being played.

Program and Random play

PLAY MODE

Press [PLAY MODE] while stopped.

Program and random playback screens appear sequentially.

Program → Random* → off (Normal play) → Program

*"RANDOM 1" and "RANDOM 2" (➜ right) are displayed on the main unit's display when CD Mode is on (➜ page 14).

To exit the program and random mode

Press [PLAY MODE] several times while stopped.

- Selecting "Play as Data Disc" in Other Menu (➜ page 20) will be effective if the following functions are not available to play WMA, MP3 or JPEG files.
- DVD-V Some items cannot be played even if you have programmed them.
- DVD-A Some discs contain bonus groups. If a password screen appears after selecting a group, enter the password with the numbered buttons to play the bonus group. Refer also to the disc's jacket.

Program play (up to 32 items)

■ *When CD Mode is off*

DVD-A DVD-V VCD CD WMA MP3 JPEG

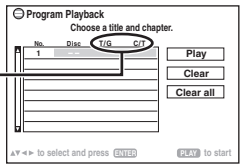
You can program all the items on a disc in the play position.

① VCD CD **Skip to step ②**

Press the numbered buttons to select a group or title.

(WMA MP3 JPEG Press [ENTER] to register the selection.)

e.g. DVD-V



T/G: Title/Group
C/T: Chapter, Content/ Track

- To select a 2-digit number
  e.g. To select 12: [≧10] ➜ [1] ➜ [2]
  WMA MP3 JPEG [1] ➜ [2] ➜ [ENTER]

② **Press the numbered buttons to select a chapter or track.**

(WMA MP3 JPEG Press [ENTER] to register the selection.)

- Repeat steps ① and ② to program other items.

③ **Press [► PLAY].**

■ *When CD Mode is on* (➜ page 14)

VCD CD WMA MP3

You can program all the items on all the discs.

① **Press the numbered buttons ([1] – [5]) to select a disc.**

② WMA MP3 **Press the numbered buttons to select a group.**

(Press [ENTER] to register the selection.)

- To select a 2-digit number
  e.g. To select 12: [1] ➜ [2] ➜ [ENTER]

③ **Press the numbered buttons to select a track.**

(WMA MP3 Press [ENTER] to register the selection.)

- To select a 2-digit number
  e.g. To select 12: [≧10] ➜ [1] ➜ [2]
  WMA MP3 [1] ➜ [2] ➜ [ENTER]
- Repeat steps ① to ③ to program other items.

④ **Press [► PLAY].**

To select an item using the cursor buttons

Press [ENTER] and [▲, ▼] to select an item, and then press [ENTER] again to register.

To change the selected program

1 Press [▲, ▼] to select the program number.
2 Press the numbered buttons to change each item.
(WMA MP3 Press [ENTER] to register the selection.)

To clear the selected program

1 Press [▲, ▼] to select the program number.
2 Press [CANCEL] (or press [▲, ▼, ◄, ►] to select "Clear" and press [ENTER]).

To clear the whole program

Select "Clear all" with [▲, ▼, ◄, ►] and press [ENTER].
The whole program is also cleared when the disc is moved out of the play position, the unit is turned off or another source is selected.

Random play

■ *When CD Mode is off*

VCD CD

You can play all the items on a disc in the play position in random order.

DVD-A DVD-V WMA MP3 JPEG

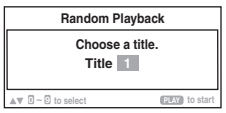
You can play selected item(s) on a disc in the play position in random order.

① DVD-A DVD-V WMA MP3 JPEG

Press the numbered buttons to select a group or a title.

(WMA MP3 JPEG Press [ENTER] to register the selection.)

e.g. DVD-V



DVD-A

- To enter all groups, press [◄, ►] to select "All" and press [ENTER].
- To deselect a group, press numbered buttons corresponding to the group you want to clear.

② **Press [► PLAY].**

■ *When CD Mode is on* (➜ page 14)

VCD CD WMA MP3

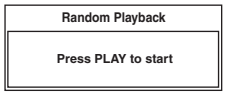
You can select either "RANDOM 1" or "RANDOM 2".

- **RANDOM 1**
  You can play all the items on all the discs in random order.

- **RANDOM 2**
  You can play all the discs in sequence, but all the items on each disc are played in random order.

Press [► PLAY].

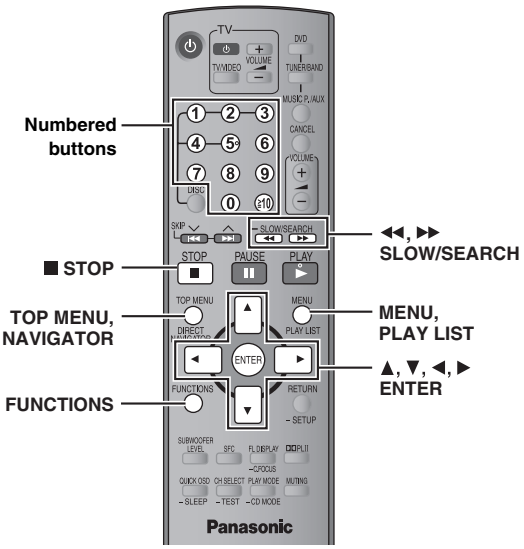
e.g. CD



Convenient functions

RQT8593

Playing data discs using navigation menus



Playing data discs

WMA MP3 JPEG

TOP MENU / MENU

Selecting "Play as Data Disc" in Other Menu (➜ page 20) will be effective if the following functions are not available to play WMA, MP3 or JPEG files.

- Playing HighMAT™ discs (➜ page 17)

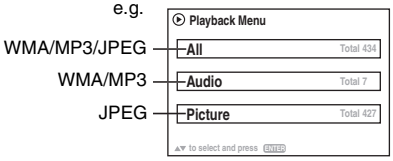
Playing items in order (Playback Menu)

(Except JPEG files on DVD-RAM)

1 Press [TOP MENU].

- To exit the screen, press [TOP MENU].

e.g.



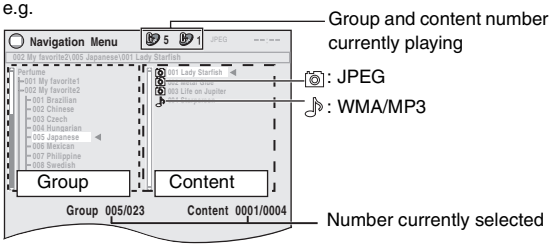
2 Press [▲, ▼] to select "All", "Audio" or "Picture" and press [ENTER].

Playing from the selected item (Navigation Menu)

1 Press [MENU].

- To exit the screen, press [MENU].

e.g.



2 Press [▲, ▼, ◀, ▶] to select the group and press [ENTER].

3 To play content in the group in order
Press [ENTER].
To start play from the selected content
Press [▲, ▼] to select and [ENTER].

To enjoy listening to WMA/MP3 contents while showing a JPEG image on the screen, select a JPEG file first and then select audio contents. (The opposite order is not effective.)

■ *Using the submenu*

① While Navigation Menu is displayed
Press [FUNCTIONS].

② Press [▲, ▼] to select an item and press [ENTER].

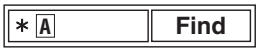
Items shown differ depending on the type of disc.

✓ Multi	Groups and contents are displayed.
List	Contents only
Tree	Groups only
Thumbnail	Thumbnail images JPEG
Next group	To go to next group WMA MP3
Previous group	To go to previous group WMA MP3
All	WMA/MP3 and JPEG
Audio	WMA/MP3 only
Picture	JPEG only
Help display	To switch between guide messages and the elapsed play time indicator
Find	To search by content or group title (➜ below)

■ *Searching by a content or group title*

Highlight a group title to search the group, or a content title to search its content.

① While the submenu is displayed (➜ above)
Press [▲, ▼] to select "Find" and press [ENTER].



② Press [▲, ▼] to select a character and press [ENTER].

- Repeat to enter another character.
- Lower case characters are also searched.
- Press [◀◀, ▶▶ SLOW/SEARCH] to skip between A, E, I, O and U.
- Press [◀] to erase a character.
- Leave the asterisk (∗) when you search for the titles including the character you enter.
- Erase the asterisk (∗) to search for the titles starting with the character you enter. To add the asterisk (∗) again, display the submenu again and select "Find".

③ Press [▶] to select "Find" and press [ENTER].
The search result screen appears.

④ Press [▲, ▼] to select the content or group and press [ENTER].

Selecting a track using CD text

CD

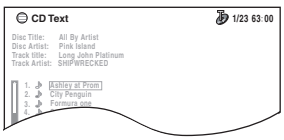
TOP MENU / MENU

Titles appear with CD Text disc playback.

1 Press [TOP MENU] or [MENU].

- To exit the screen, press [TOP MENU] or [MENU].

e.g. CD text



2 Press [▲, ▼] to select the track and press [ENTER].

- Press [FUNCTIONS] to show the playback condition and current position.

Playing HighMAT™ discs

WMA MP3 JPEG

TOP MENU / MENU

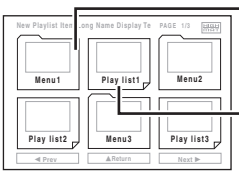
1 Press [TOP MENU].

- To exit the screen, press [■ STOP].
- To change the menu background to the one recorded on the disc, press [FUNCTIONS].

2 Press [▲, ▼, ◄, ►] to select the item, and then press [ENTER].

- Repeat this step if necessary.

e.g.



Menu: Takes you to the next menu which shows play lists or another menu

Play list: play starts

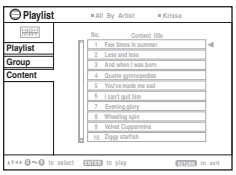
Selecting from the list

1 During play

Press [MENU].

- To exit the screen, press [MENU].

e.g.



2 Press [◄] followed by [▲, ▼] to switch among "Playlist", "Group" and "Content" lists.

3 Press [►] followed by [▲, ▼] to select an item and press [ENTER].

Playing RAM discs

DVD-VR

DIRECT NAVIGATOR / PLAY LIST

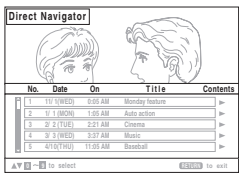
- Titles appear only if the titles are recorded on the disc.
- You cannot edit programs, play lists and disc titles.

Playing the programs

1 Press [DIRECT NAVIGATOR].

- To exit the screen, press [DIRECT NAVIGATOR].

e.g.



2 Press [▲, ▼] or the numbered buttons to select the program.

- To select a 2-digit number
  e.g. 12: [≧10] ➜ [1] ➜ [2]
- Press [►] to show the contents of the program and the disc.

3 Press [ENTER].

Playing a play list

This works only when the disc contains a play list.

1 Press [PLAY LIST].

- To exit the screen, press [PLAY LIST].

e.g.

2 Press [▲, ▼] or the numbered buttons to select the play list.

- To select a 2-digit number
  e.g. 12: [≧10] ➜ [1] ➜ [2]

3 Press [ENTER].

Tips for making data discs

- When there are more than 8 groups, the eighth group onwards will be displayed on one vertical line in the menu screen.
- There may be differences in the display order on the menu screen and computer screen.
- This unit cannot play files recorded using packet write.

DVD-RAM

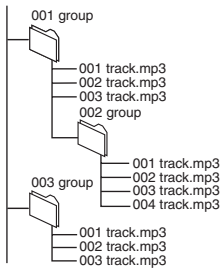
- Discs must conform to UDF 2.0.

CD-R/RW

- Discs must conform to ISO9660 level 1 or 2 (except for extended formats).
- This unit supports multi-session but if there are many sessions it takes more time for play to start. Keep the number of sessions to a minimum to avoid this.

Naming folders and files
(Files are treated as contents and folders are treated as groups on this unit.)
At the time of recording, prefix folder and file names. This should be with numbers that have an equal number of digits, and should be done in the order you want to play them (this may not work at times).
Files must have the extension (➜ below).

e.g. MP3



WMA (Extension: ".WMA" or ".wma")

- You cannot play WMA files that are copy-protected.
- This unit does not support Multiple Bit Rate (MBR).

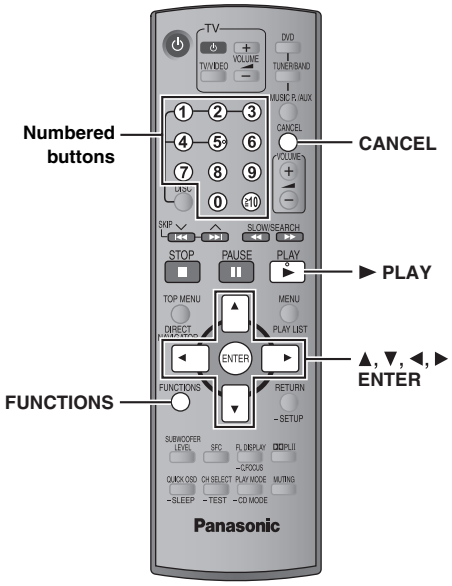
MP3 (Extension: ".MP3" or ".mp3")

- This unit does not support ID3 tags.
- Compatible sampling rates: 8, 11.02, 12, 16, 22.05, 24, 32, 44.1 and 48 kHz.

JPEG (Extension: ".JPG", ".jpg", ".JPEG" or ".jpeg")

- To view JPEG files on this unit:
  – Take them on a digital camera that meets the DCF Standard (Design rule for Camera File system) Version 1.0. Some digital cameras have functions that are not supported by the DCF Standard Version 1.0 like automatic picture rotation which may render a picture unviewable.
  – Do not alter the files in any way or save them under a different name.
- This unit cannot display moving pictures, MOTION JPEG and other such formats, and still pictures other than JPEG (e.g. TIFF), or play pictures with attached audio.

Using on-screen menus



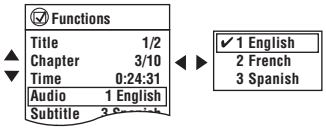
1 FUNCTIONS

Press once.

2 Select / Go to the next menu / Register / Return to the previous menu

Select the menu.

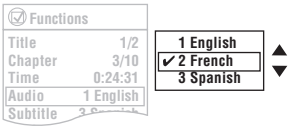
e.g. DVD-V



3 Select / Register

Make the settings.

e.g. DVD-V



4 FUNCTIONS

Press to exit.

Main menu

Items shown differ depending on the type of disc.

Program Group Title Chapter Track Playlist Content	**To start from a specific item** e.g. DVD-VR To select Program 12 Press the numbered buttons: [1] ➜ [2] ➜ [ENTER]
Time	(Time Slip and Time Search do not work with +R/+RW discs.) **To skip incrementally or decrementally (Time Slip for play only)** 1 Press [ENTER] twice to show the Time Slip indicator. 2 Press [▲, ▼] to select the time and press [ENTER]. ● To change the steps more quickly, press and hold [▲, ▼]. **To start from a specific time (Time Search)** **To change remaining/elapsed time display**
Audio	DVD-A DVD-V (with multiple soundtracks) **To select audio soundtrack** DVD-VR VCD **To select "L", "R" or "LR"** DVD-V (Karaoke disc) **To select "On" or "Off" for vocals** ● Read the disc's instructions for details. **Signal type/data** LPCM/PPCM/DD Digital/DTS/MPEG: Signal type kHz (Sampling frequency)/bit/ch (Number of channels) e.g. 3/2 .1ch .1: Low frequency effect (not displayed if there is no signal) 0: No surround 1: Mono surround 2: Stereo surround (left/right) 1: Center 2: Front left+Front right 3: Front left+Front right+Center
	WMA MP3 **To display the current bitrate or sampling frequency**

Still Picture	**To switch still pictures**
Thumbnail	**To show thumbnail images**
Subtitle	DVD-V (with multiple subtitles) VCD (SVCD only) **To select subtitle language** ● On +R/+RW, a subtitle number may be shown for subtitles that are not displayed. ● DVD-VR "On" or "Off" appears only with discs that contain subtitle on/off information (Subtitle on/off information cannot be recorded using Panasonic DVD Recorders).
Marker (VR)	DVD-VR **To recall a marker recorded on DVD-Video recorders** Press [▲, ▼] ➜ Press [ENTER].
Angle	(with multiple angles) **To select a video angle**
Rotate Picture	**To rotate a picture**
Slideshow	**To turn on/off slideshow** **On ⟷ Off** **To change the slideshow timing** **0 – 30 sec**
Other Settings	(➜ page 19)

Play Speed	DVD-A (Motion picture part) DVD-VR DVD-V **To change play speed** – from "×0.6" to "×1.4" ● Press [► PLAY] to return to normal play. ● After you change the speed – Dolby Pro Logic II and Sound Enhancement have no effect. – Audio output switches to 2-channel stereo (except when Surround Music is on). – Sampling frequency of 96 kHz is converted to 48 kHz. ● This function may not work depending on the disc's recording.

■ *Play Menu*

This works only when the elapsed play time can be displayed. It also works with all JPEG content.

Repeat	DVD-VR: Program→Disc→Off ● During play list play: Scene→Playlist→Off DVD-A: Track→Group*→Off DVD-V: Chapter→Title*→Off VCD CD: Track→Disc*→Off ● When CD Mode is on: Track→Disc→All CD's→Off ● When CD Mode is on during program or random play: Track→All CD's→Off WMA MP3: Content→Group*→Off ● When CD Mode is on: Content→Group→All CD's→Off ● When CD Mode is on during program or random play: Content→All CD's→Off JPEG: Group*→Off * "All" is displayed during program and random play.
A-B Repeat	Except JPEG DVD-VR (Still picture part) **To repeat a specified section** Press [ENTER] at the starting and ending points. Press [ENTER] again to cancel.
Marker	Except DVD-VR **To mark up to 5 positions to play again** Press [ENTER] (The unit is now ready to accept markers.) To mark a position: Press [ENTER] (at the desired point). To mark another position: Press [◄, ►] to select "✳" ➜ Press [ENTER]. To recall a marker: Press [◄, ►] ➜ Press [ENTER]. To erase a marker: Press [◄, ►] ➜ Press [CANCEL]. ● This feature does not work during program and random play. ● Markers you add are cleared when you change the disc in the play position or switch the unit to standby.
Advanced Disc Review	DVD-VR (Except still picture part) DVD-V (Except +R/+RW) Allows you to browse the disc contents and start playing from the selected position. You can select either "Intro Mode" or "Interval Mode" in "Advanced Disc Review" in the "Disc" tab (➜ page 21). **When you find a title/program to play** Press [► PLAY]. ● This may not work depending on the disc and the play position. ● DVD-VR This does not work when playing a playlist (➜ page 17).

■ *Picture Menu*

Picture Mode	**Normal** **Cinema1**: Mellows images and enhances detail in dark scenes. **Cinema2**: Sharpens images and enhances detail in dark scenes. **Animation**: Suitable for animation. **Dynamic**: Enhances the contrast for powerful images. **User**: Press [ENTER] to select "Picture Adjustment" (➜ below). **Picture Adjustment** **Contrast**: Increases the contrast between light and dark parts of the picture. **Brightness**: Brightens the picture. **Sharpness**: Adjusts the sharpness of the edges of horizontal lines. **Color**: Adjusts the shade of the picture's color. **Gamma**: Adjusts the brightness of dark parts. **Depth Enhancer**: Reduces the rough noise in the background to give a greater feeling of depth.
Video Output Mode	**To select suitable picture quality with your television** **480i** (interlaced) ⟷ **480p** (progressive) When you select "480p", a confirmation screen appears. Select "Yes" only if connecting to a progressive output compatible television.
Transfer Mode	If you have chosen "480p" (➜ above), select the method of conversion for progressive output to suit the type of material. **Auto1** (normal): Detects 24 frame-per-second film content and appropriately converts it. **Auto2**: Compatible with 30 frame-per-second film content in addition to 24 frame-per-second film content. **Video**: Select when using Auto1 or Auto2, and the video content is distorted.

(Continued on next page)

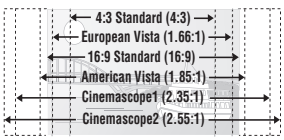
Other Settings

Items shown differ depending on the type of disc.

■ *Audio Menu*

Dolby Pro Logic II	(➜ page 26, Enhancing the stereo sound: Dolby Pro Logic II)
Dialogue Enhancer	**To make the dialogue in movies easier to hear** DVD-V (Dolby Digital, DTS, 3-channel or higher, with the dialogue recorded in the center channel) **On ⟷ Off**
Sound Enhancement	Enhances audio output to reduce noise and improve clarity. **On ⟷ Off**

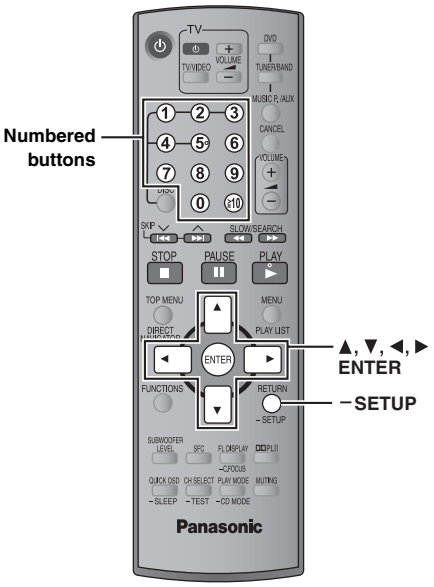
■ *Display Menu*

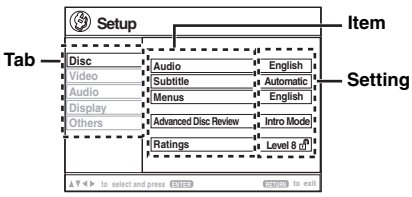
Information	JPEG **Off, Date, Details**
Subtitle Position	**0 to −60 (in 2 unit steps)**
Subtitle Brightness	**Auto, 0 to −7**
4:3 Aspect	**To select how to show images made for 4:3 aspect screens on a 16:9 aspect television** **Normal:** Laterally stretches images. **Auto:** Expands 4:3 letterbox images to fill more of the screen. Other images appear in full in the center of the screen. **Shrink:** Images appear in the center of the screen. **Zoom:** Expands all images to fill the screen. If your television has a similar feature, use it instead for a better effect.
Just Fit Zoom	**To select the appropriate screen size to fit your television screen** DVD-A (Motion picture part) DVD-VR DVD-V VCD **Auto**, **4:3 Standard**, **16:9 Standard**, **Cinemascope1**, **European Vista**, **American Vista**, **Cinemascope2** e.g. 
Manual Zoom	**To zoom in and out manually** – in 0.01-unit steps from "×1.00" to "×1.60" – in 0.02-unit steps from "×1.60" to "×2.00" ● To change the steps more quickly, press and hold [▲, ▼].
Bit Rate Display	DVD-A (Motion picture part) DVD-VR DVD-V VCD **On ⟷ Off**
GUI See-through	**To make the on-screen menu transparent** **Off**, **On**, **Auto**
GUI Brightness	**To adjust the on-screen menu brightness** **−3 to +3**

■ *Other Menu*

Setup	(➜ page 21)
Play as DVD-Video or **Play as DVD-Audio**	**To play DVD-Video contents of DVD-Audio** Select "Play as DVD-Video".
Play as DVD-VR, Play as HighMAT or **Play as Data Disc**	**To use functions for data discs (➜ page 16)** Select "Play as Data Disc".

Changing the player settings





- The settings remain intact even if you switch the unit to standby.
- Underlined items are the factory settings in the following diagram.

1 – SETUP

Press and hold to show the Setup menu.
If you have not performed QUICK SETUP (➜ page 9), the QUICK SETUP screen appears.

2 Select / Go right

Select the tab.

3 Select / Register

Select the item.

4 Select / Register / 1 2 3 4 5 6 7 8 9 0 ≥10

Make the settings.

5 – SETUP

Press and hold to exit.

QUICK SETUP enables successive settings of the items in the shaded area.

■ *"Disc" tab*

Audio Choose the audio language.	● English	● French	● Spanish	● Original※1	● Other∗∗∗∗※2
Subtitle Choose the subtitle language.	● Automatic※3	● English	● French	● Spanish	● Other∗∗∗∗※2
Menus Choose the language for disc menus. Changing the menu language in QUICK SETUP also changes this setting.	● English	● French	● Spanish	● Other∗∗∗∗※2	
Advanced Disc Review (➜ page 19)	● Intro Mode: Reviews each title/program. ● Interval Mode: Reviews not only each title/program but also each 10-minute interval within a title/program.				
Ratings Set a rating level to limit DVD-Video play.	Setting ratings (When level 8 is selected) ● 8 No Limit ● 1 to 7 ● 0 Lock All: To prevent play of discs without rating levels.				
	When you select your ratings level, a password screen is shown. Follow the on-screen instructions. **Do not forget your password.** A message screen will be shown if a DVD-Video disc exceeding the rating level is inserted in the unit. Enter your password and then follow the on-screen instructions.				

※1 The original language designated on the disc is selected.
※2 Input the appropriate code from the language code list (➜ page 23).
※3 If the language selected for "Audio" is not available, subtitles appear in that language (if available on the disc).

(Continued on next page)

QUICK SETUP enables successive settings of the items in the shaded area.

■ "*Video*" tab

TV Aspect Choose the setting to suit your television and preference.	● 4:3 Pan&Scan: Regular aspect television (4:3) The sides of the widescreen picture are cut off so it fills the screen (unless prohibited by the disc).
	● 4:3 Letterbox: Regular aspect television (4:3) Widescreen picture is shown in the letterbox style.
	● 16:9: Widescreen television (16:9)
TV Type Select to suit the type of television.	● Standard (Direct View TV) ● CRT Projector ● LCD TV/Projector ● Projection TV ● Plasma TV
Time Delay When connected with a Plasma display, adjust if you notice the audio is out of sync with the video.	● 0ms ● 20ms ● 40ms ● 60ms ● 80ms ● 100ms
Still Mode Specify the type of picture shown when paused.	● Automatic ● Field※: The picture is not blurred, but picture quality is lower. ● Frame※: Overall quality is high, but the picture may appear blurred.
Black Level Control Change the black level of the picture if you connected a television through the COMPONENT VIDEO OUT terminals.	● Lighter: When connected through VIDEO OUT or S-VIDEO OUT. ● Darker: When connected through COMPONENT VIDEO OUT ($Y/P_B/P_R$).

※ Refer to "Frame still and field still" (➜ page 11, Glossary).

■ "*Audio*" tab

Dynamic Range Compression	● Off ● On: Adjusts for clarity even when the volume is low by compressing the range of the lowest sound level and the highest sound level. Convenient for late night viewing. (Only works with Dolby Digital)
Speaker Settings (➜ page 23) Set the delay time for your center and surround speakers.	● Center: 0.0/1.0/2.0/3.0/4.0/5.0 ms ● Surround (L/R): 0.0/5.0/10.0/15.0 ms

■ "*Display*" tab

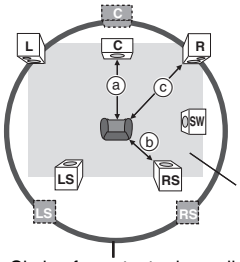
Menu Language	● English ● Français ● Español
On-Screen Messages	● On ● Off

■ "*Others*" tab

FL Dimmer Change the brightness of the unit's display.	● Bright ● Dim ● Auto: The display is dimmed, but brightens when you perform some operations.
QUICK SETUP	● Yes ● No
Re-initialize Setting Return all values in the Setup menus to the default settings.	● Yes: The password screen is shown if "Ratings" (➜ page 21) is set. Please enter the same password. After "INIT" on the display disappears, turn the unit off and on again. ● No

Changing the delay time of the speakers

(Effective when playing multi-channel audio)
(Center and surround speakers only)
For optimum listening with 5.1-channel sound, all the speakers, except for the subwoofer, should be the same distance from the seating position.
If you have to place the center or surround speakers closer to the seating position, adjust the delay time to make up for the difference.



: Actual speaker position

: Ideal speaker position

ⓐ ⓑ ⓒ : Primary listening distance

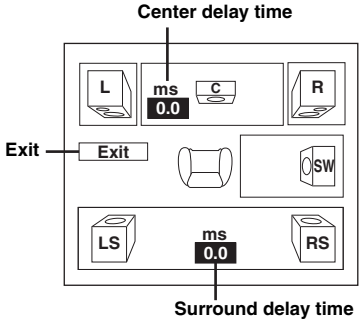
Approximate room dimensions

Circle of constant primary listening distance

If either distance ⓐ or ⓑ is less than ⓒ, find the difference in the table and change to the recommended setting.

ⓐ **Center speaker**		ⓑ **Surround speaker**	
Difference (Approx.)	Setting	Difference (Approx.)	Setting
30 cm (1 foot)	1.0 ms	150 cm (5 feet)	5.0 ms
60 cm (2 feet)	2.0 ms	300 cm (10 feet)	10.0 ms
90 cm (3 feet)	3.0 ms	450 cm (15 feet)	15.0 ms
120 cm (4 feet)	4.0 ms		
150 cm (5 feet)	5.0 ms		

1 Press [▲, ▼] to select the delay time box and press [ENTER].
2 Press [▲, ▼] to adjust the delay time and press [ENTER].



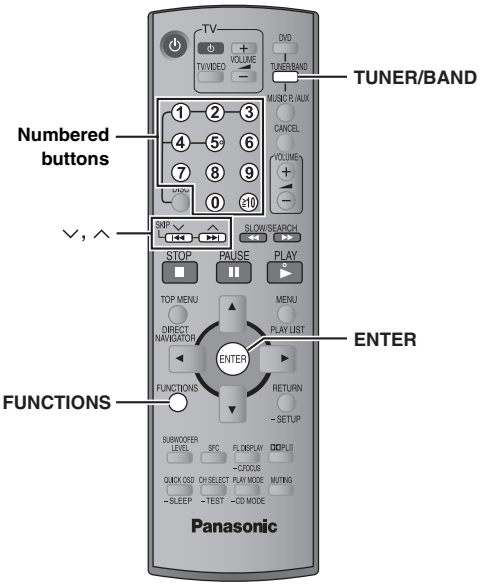
To finish the speaker setting
Press [◀] to select "Exit" and press [ENTER].

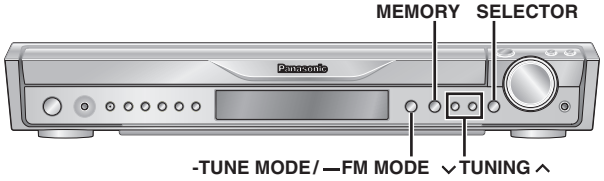
When you change the surround speaker setting for Dolby Digital, the setting also changes for Dolby Pro Logic II.
e.g., the settings for Music are the same as those for Dolby Digital.

Dolby Digital	**Dolby Pro Logic II**	
	Music	**Movie**
0 ms	0 ms	10 ms
5 ms	5 ms	15 ms
10 ms	10 ms	20 ms
15 ms	15 ms	25 ms

Language code list

Abkhazian:	6566	Danish:	6865	Italian:	7384	Norwegian:	7879	Swedish:	8386
Afar:	6565	Dutch:	7876	Japanese:	7465	Oriya:	7982	Tagalog:	8476
Afrikaans:	6570	English:	6978	Javanese:	7487	Pashto, Pushto:	8083	Tajik:	8471
Albanian:	8381	Esperanto:	6979	Kannada:	7578	Persian:	7065	Tamil:	8465
Ameharic:	6577	Estonian:	6984	Kashmiri:	7583	Polish:	8076	Tatar:	8484
Arabic:	6582	Faroese:	7079	Kazakh:	7575	Portuguese:	8084	Telugu:	8469
Armenian:	7289	Fiji:	7074	Kirghiz:	7589	Punjabi:	8065	Thai:	8472
Assamese:	6583	Finnish:	7073	Korean:	7579	Quechua:	8185	Tibetan:	6679
Aymara:	6589	French:	7082	Kurdish:	7585	Rhaeto-Romance:	8277	Tigrinya:	8473
Azerbaijani:	6590	Frisian:	7089	Laotian:	7679	Romanian:	8279	Tonga:	8479
Bashkir:	6665	Galician:	7176	Latin:	7665	Russian:	8285	Turkish:	8482
Basque:	6985	Georgian:	7565	Latvian, Lettish:	7686	Samoan:	8377	Turkmen:	8475
Bengali, Bangla:	6678	German:	6869	Lingala:	7678	Sanskrit:	8365	Twi:	8487
Bhutani:	6890	Greek:	6976	Lithuanian:	7684	Scots Gaelic:	7168	Ukrainian:	8575
Bihari:	6672	Greenlandic:	7576	Macedonian:	7775	Serbian:	8382	Urdu:	8582
Breton:	6682	Guarani:	7178	Malagasy:	7771	Serbo-Croatian:	8372	Uzbek:	8590
Bulgarian:	6671	Gujarati:	7185	Malay:	7783	Shona:	8378	Vietnamese:	8673
Burmese:	7789	Hausa:	7265	Malayalam:	7776	Sindhi:	8368	Volapük:	8679
Byelorussian:	6669	Hebrew:	7387	Maltese:	7784	Singhalese:	8373	Welsh:	6789
Cambodian:	7577	Hindi:	7273	Maori:	7773	Slovak:	8375	Wolof:	8779
Catalan:	6765	Hungarian:	7285	Marathi:	7782	Slovenian:	8376	Xhosa:	8872
Chinese:	9072	Icelandic:	7383	Moldavian:	7779	Somali:	8379	Yiddish:	7473
Corsican:	6779	Indonesian:	7378	Mongolian:	7778	Spanish:	6983	Yoruba:	8979
Croatian:	7282	Interlingua:	7365	Nauru:	7865	Sundanese:	8385	Zulu:	9085
Czech:	6783	Irish:	7165	Nepali:	7869	Swahili:	8387		





Presetting stations automatically

Main unit only

Up to 15 stations can be set in each band, FM and AM.

1 **Press [SELECTOR] to select “FM” or “AM”.**

2 **Press [-TUNE MODE] to select “MANUAL”.**
Each time you press the button: MANUAL⟷PRESET

3 **Press [∨ TUNING ∧] to tune to the lowest frequency (FM: 87.9 or 87.5, AM: 520).**

4 **Press and hold [MEMORY].**
Release the button when “FM AUTO” or “AM AUTO” is displayed.

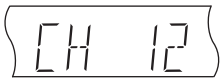
The tuner presets all the stations it can receive into the channels in ascending order.
- “SET OK” is displayed when the stations are set, and the radio tunes to the last preset station.
- “ERROR” is displayed when automatic presetting is unsuccessful. Preset the channels manually (➜ right).

Selecting the preset channels

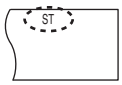
1 **Press [TUNER/BAND] to select “FM” or “AM”.**

2 **Press the numbered buttons to select the channel.**
- To select a 2-digit number
  e.g. 12: [≧10] ➜ [1] ➜ [2]

Alternatively, press [∨, ∧].



When a stereo FM broadcast is being received, “ST” lights in the display.



■ *If noise is excessive*

When “FM” is selected

Press and hold [—FM MODE] on the main unit to display “MONO”.

Press and hold [—FM MODE] again to cancel the mode.
- The mode is also canceled when you change the frequency.

When “AM” is selected

Press [FUNCTIONS] on the remote control.
Each time you press the button: BP 2⟷BP 1

Manual tuning

Main unit only

1 **Press [SELECTOR] to select “FM” or “AM”.**

2 **Press [-TUNE MODE] to select “MANUAL”.**

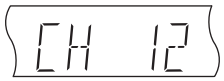
3 **Press [∨ TUNING ∧] to select the frequency.**
- To start automatic tuning, press and hold [∨ TUNING ∧] until the frequency starts scrolling. Tuning stops when a station is found.

■ *Presetting the channel*

Up to 15 stations can be set in each band, FM and AM.

① While listening to the radio broadcast
Press [ENTER].

② While the frequency and “PGM” are flashing on the display
Press the numbered buttons to select a channel.
- To select a 2-digit number
  e.g. To select 12:
  [≧10] ➜ [1] ➜ [2]



Alternatively, press [∨, ∧], and then press [ENTER].

The station occupying a channel is erased if another station is preset to that channel.

■ *FM frequency step*

Main unit only

The step is factory-set to 0.2-MHz, but you can change it to receive broadcasts allocated in 0.1-MHz steps.

① **Press [SELECTOR] to select "FM".**

② **Press and hold [SELECTOR].**
After a few seconds the display changes to show the current minimum frequency. Continue to hold the button down. The minimum frequency changes and the step is changed.

To return to the original step, repeat steps ① and ②.

Note

After changing the setting, previously preset frequencies will be cleared. Preset them again.

Using an outdoor antenna (optional)

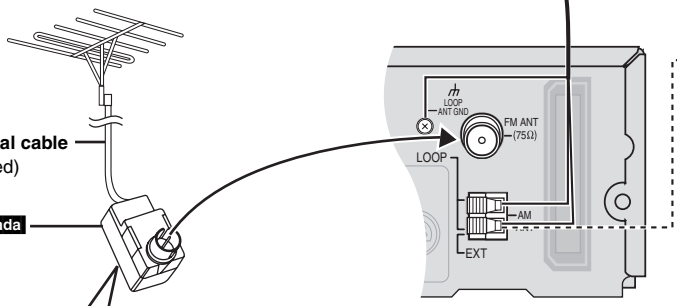
Use outdoor antennas if radio reception is poor.
- Disconnect the antenna when the unit is not in use.
- Do not use the outdoor antenna during an electrical storm.

The illustration shows the model for U.S.A. and Canada.

FM outdoor antenna (Using a television antenna)

- Disconnect the FM indoor antenna.
- The antenna should be installed by a competent technician.

Rework your outdoor antenna's 75 Ω coaxial cable as follows.



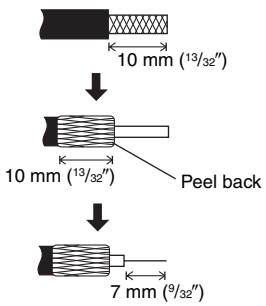
Leave the AM loop antenna connected.

AM outdoor antenna (Using a vinyl wire)

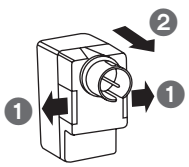
Run a piece of vinyl wire horizontally across a window or other convenient location.

5 to 12 m
(16 to 39 feet)

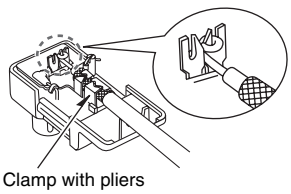
① **Remove a piece of the outer vinyl insulator.**



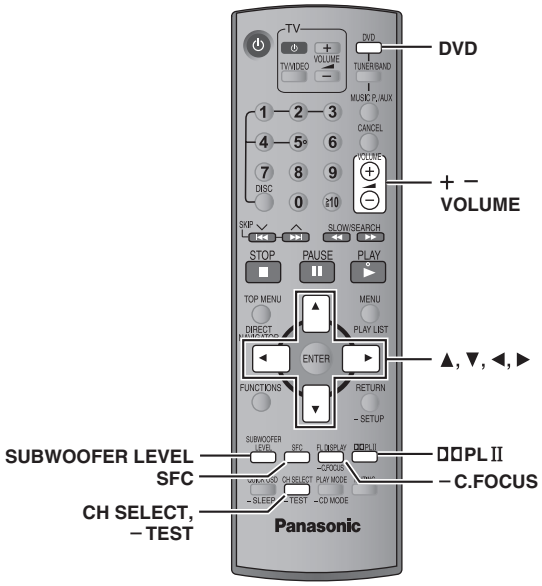
② **Carefully pull the tabs apart to remove the cover.**



③ **Install the coaxial cable.**
Clamp the cable conductor, and wind it on so that it does not contact anything else.



④ **Attach the cover.**



Note

- When connected with headphones or the Rear Music Port (➜ page 29), Surround Music and the following sound effects may not be available or have no effect. (Excluding Sound Field Control: HEAVY, CLEAR or SOFT)
- You may experience a reduction in sound quality when these sound effects are used with some sources. If this occurs, turn the sound effects off.
- If you turn on Dolby Pro Logic II, Sound Field Control (MOVIE, SPORT or MUSIC) is canceled.

Changing the sound quality: Sound Field Control

SFC

To enjoy the following sound quality settings, ensure that Surround Music (➜ page 12) is turned off.

Press [SFC].

Each time you press the button:

FLAT: Cancel (no effect is added) (factory preset).
MOVIE: Use this mode when playing movie software.
SPORT: Simulates sound to make you feel like you are at a sports event.
MUSIC: Adds surround effects to stereo sources.
HEAVY: Adds punch to rock.
CLEAR: Clarifies higher sounds.
SOFT: For background music.

- To check the current setting, press [SFC].
- MOVIE, SPORT and MUSIC are not available when Dolby Pro Logic II is on, or when playing a disc recorded with a multi-channel source.
- You can adjust the volume of the surround speakers to get the best surround effect (➜ page 27, Adjusting the volume of each speaker: Speaker level adjustments).

Enhancing the sound from the center speaker: Center Focus

– C.FOCUS

This applies to discs where the dialogue is recorded in the center channel.

You can make the sound of the center speaker seem like it is coming from within the television.

Press and hold [—C.FOCUS].

Each time you press and hold the button:
C FOCUS ON⟷C FOCUS OFF

- This does not work when Surround Music (➜ page 12) or Sound Field Control (MOVIE, SPORT or MUSIC) is turned on.
- This also works when Dolby Pro Logic II is turned on.

Enhancing the stereo sound: Dolby Pro Logic II

DPLII

Dolby Pro Logic II is an advanced decoder that derives 5-channel surround (Left and Right Front, Center, Left and Right Surround) from stereo sound sources, whether or not it has been specifically Dolby Surround encoded.

Press [DPLII].

Each time you press the button:

Movie: Movie software, recorded in Dolby Surround.
Music: Stereo sources
Off: Cancel

- This works only in DVD/CD mode.
- "DPLII" lights when there is effect.
- Dolby Pro Logic II is canceled when Surround Music is turned on.

Adjusting the amount of bass: Subwoofer level

SUBWOOFER LEVEL

You can adjust the amount of bass. The unit automatically selects the most suitable setting according to the type of playing source.

Press [SUBWOOFER LEVEL].

- DVD-V DVD-VR

SUB W 4 (factory preset)※⟶SUB W 1⟶SUB W 2⟶SUB W 3

- **When another source is selected**

SUB W 2 (factory preset)※⟶SUB W 3⟶SUB W 4⟶SUB W 1

- To check the current setting, press [SUBWOOFER LEVEL].
- The setting you make is retained, and recalled every time you play the same type of source, except when Sound Field Control (MOVIE, SPORT or MUSIC) is turned on.

※ When Sound Field Control (MOVIE, SPORT or MUSIC) is on, the factory presets are as follows:
– MOVIE: SUB W 4
– SPORT: SUB W 2
– MUSIC: SUB W 1

Adjusting the volume of each speaker: Speaker level adjustments

–TEST

This is one of the ways to get appropriate surround effects.

Preparation

Press [DVD].

1 While stopped and no on-screen display is shown

Press and hold [—TEST] to output a test signal.

- To stop the test signal, press and hold [—TEST] again.

L: Front left C: Center R: Front right
RS: Right surround LS: Left surround

- There is no output from SW (subwoofer) channel.

2 **Press [VOLUME, +] or [−] to set the volume level normally used for listening.**

3 **Press [▲] (increase) or [▼] (decrease) to adjust the speaker level for each speaker.**

- Adjust the speaker levels to the same level as the front speakers.

C, RS, LS: −6 dB to +6 dB

■ *To adjust speaker level during play*

[Effective when playing multi-channel audio or when Dolby Pro Logic II or Sound Field Control (MOVIE, SPORT or MUSIC) is on, and Surround Music is off.]

① **Press [CH SELECT] to select the speaker.**

L → C → R → RS → LS → SW
↑ ↓

SW: Subwoofer

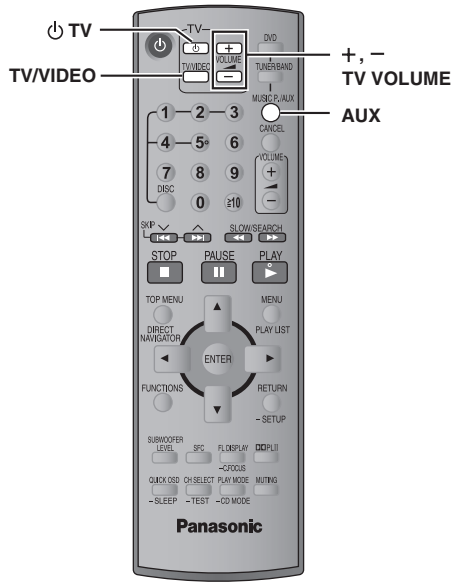
- You can adjust SW only if the disc includes a subwoofer channel.
- "SW" does not appear on the display and is not adjustable when "DD PLII" is lit.
- "S" appears on the display when "MOVIE", "SPORT" or "MUSIC" is selected with Sound Field Control (➜ page 26). In this case, you can adjust both surround speaker levels at the same time using [▲, ▼].

S: −6 dB to +6 dB

② **Press [▲] (increase) or [▼] (decrease) to adjust the speaker level for each speaker.**

C, RS, LS, SW: −6 dB to +6 dB
(L, R: Only the balance is adjustable.)

- To adjust the balance of the front speakers, while "L" or "R" is selected, press [◄, ►].



You can use the remote control to operate a Panasonic television. Connect your equipment referring to “Cable TV box or video cassette recorder connection” (➜ page 7).

Note

The remote control may not work properly with some models.

Operating the television

Aim the remote control at the television.

Turning the television on/off

Press [⏻ TV].

Switching the television’s video input mode

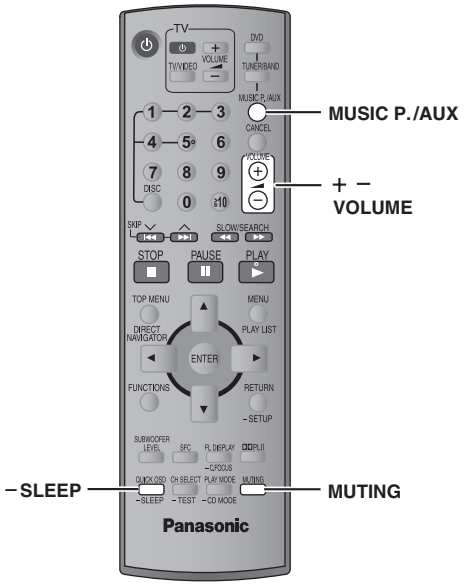
Press [TV/VIDEO].

Adjusting the volume

Press [+, – TV VOLUME].

To play audio from your television through your home theater system

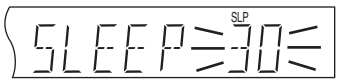
Select “AUX” as the source, reduce the volume on the television to its minimum, and control the volume on the main unit.



Setting the sleep timer

–SLEEP

1 **Press and hold [—SLEEP].**



2 While the time is shown
Press [—SLEEP] to select the time (in minutes).

SLEEP 30 → SLEEP 60 → SLEEP 90
↑ OFF ← SLEEP120 ←

To cancel the timer
While the time is shown, press [—SLEEP] to select "OFF".

To confirm the remaining time
Press and hold [—SLEEP] again.

To change the setting
Repeat the procedure from the beginning.

Muting the sound

MUTING

Press [MUTING].

"MUTING" flashes on the unit's display.

To cancel
- Press [MUTING] again or reduce the volume to minimum "VOL 0", and then raise it to the required level.
- Muting is canceled when you switch the unit to standby.

Using headphones

Main unit only

1 **Reduce the volume and connect the headphones (not included).**
Headphone plug type: 3.5 mm (1/8″) stereo

2 **Adjust headphone volume with [VOLUME].**
- Audio is automatically switched to 2-channel stereo.

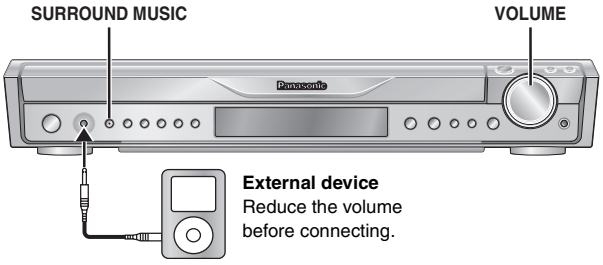
Note
To prevent hearing damage, avoid listening for prolonged periods of time.

Using the Music Port

The Music Port allows you to connect and enjoy music from an external device (e.g. MP3 player) through your home theater system.

Preparation
To avoid distorted sound, make sure that any equalizer function of your external device is turned off.

1 **Reduce the volume and connect the external device (not included).**
Plug type: 3.5 mm (1/8″) stereo



2 **Press [MUSIC P./AUX] to select "FRONT MUSIC P."**

FRONT MUSIC P. → REAR MUSIC P.* → AUX
↑

* "REAR MUSIC P." can be selected only if the optional Panasonic wireless accessory (e.g. SH-FX60) is set up with your home theater system. For details, please refer to its operating instructions.

3 **Adjust the external device volume to a normal listening level, and then adjust the volume of the main unit with [VOLUME].**
- You can enjoy surround sound when you press [SURROUND MUSIC] on the main unit (except when "REAR MUSIC P." is selected).

Troubleshooting guide

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the solutions indicated in the chart do not solve the problem, refer to “Customer Services Directory” on page 33 if you reside in the U.S.A., or refer to “Product information” on page 11 if you reside in Canada. In other areas, consult your dealer.

Power

		Page
No power.	● Insert the AC power supply cord securely.	**8**
The unit is automatically switched to standby mode.	● The Sleep timer was working and had reached the set time limit.	**29**

Unresponsive or inoperable function

No response when any buttons are pressed.	● This unit cannot play discs other than the ones listed in these operating instructions. ● The unit may not be operating properly due to lightning, static electricity or some other external factor. Turn the unit off and then back on. Alternatively, turn the unit off, disconnect the AC power supply cord, and then reconnect it. ● Condensation has formed. Wait 1 to 2 hours for it to evaporate.	**10** **—** **—**
No response when remote control buttons are pressed.	● Check that the batteries are installed correctly. ● The batteries are depleted. Replace them with new ones. ● Aim the remote control at the display and operate.	**8** **8** **9**
Cannot play DVDs.	● CD Mode is on. Press and hold [—CD MODE] to turn CD Mode off.	**14**
No picture or sound.	● Check the video or speaker connection. ● Check the power or input setting of the connected equipment. ● Check that the disc has something recorded on it.	**6, 7** **—** **—**
You have forgotten your ratings password. Reset all the settings to Factory Preset.	● While stopped and “DVD/CD” is the source, press and hold [■] (Stop) on the main unit and [≧10] on the remote control until “Initialized” disappears from the television. Turn the unit off and on again. All settings will return to the default values.	**—**

Specific operation undesirable or unexpected

It takes time before play starts. MP3	● Play may take time to begin when an MP3 track has still picture data. Even after the track starts, the correct play time will not be displayed. This is normal.	**—**
Folders on a data CD are not displayed correctly. WMA MP3 JPEG	● Folders deeper than the eighth layer are displayed as the eighth layer.	**—**
A menu screen appears during skip or search. VCD	● This is normal for Video CDs.	**—**
Playback control menu does not appear. VCD with playback control	● Press [■ STOP] twice and then press [► PLAY].	**—**
Program and Random play do not work. DVD-V	● These functions do not work with some DVD-Videos.	**—**
Selecting audio soundtrack “2” does not change the audio. DVD-A	● Even if a second soundtrack is not recorded, two numbers are normally shown.	**—**
Play restarts from the beginning when the soundtrack is changed. DVD-A	● This is normal for DVD-Audio.	**—**
Scenes are skipped intermittently. DVD-VR DVD-V	● If you change the volume or sound effects during Advanced Disc Review, the function continues without the on-screen display. Cancel the function.	**19**

Subtitle

Subtitle position is wrong.	● Adjust the position. (“Subtitle Position” in Display Menu)	**20**
No subtitles.	● Display the subtitles. (“Subtitle” in Main menu)	**18**
Subtitles overlap the closed captions.	● Clear the subtitles.	**18**

Marker

Cannot add markers.	● You cannot add markers with DVD-RAM. ● If the disc’s elapsed play time does not appear on the unit’s display, you cannot add markers.	**—** **—**

A-B repeat

Point B is automatically set.	● The end of an item becomes point B when it is reached.	**—**

Sound abnormal or improper

Sound is distorted.	● Noise may occur when playing WMA.	**—**
Effects do not work.	● Some audio effects do not work or have less effect with some discs.	**—**
Humming is heard during play.	● An AC power supply cord or fluorescent light is near the main unit. Keep other appliances and cables away from the main unit.	**—**
No sound	● There may be a slight pause in sound when you change the play speed.	**—**

Menus

The Setup menu cannot be accessed.	● Select “DVD/CD” as the source. ● Cancel Program and Random play.	**—** **15**

Picture abnormal or unviewable

		Page
The picture on the television is not displayed correctly or disappears.	● Ensure that the unit is connected directly to the television, and is not connected through a video cassette recorder. ● Mobile telephone chargers can cause some disturbance. ● If you are using an indoor television, change to an outdoor antenna. ● The television antenna wire is too close to the unit. Move it away from the unit.	7 — — —
Picture size does not fit the screen.	● Change "TV Aspect" in the "Video" tab. ● Use the television to change the aspect. If your television does not have that function, change "4:3 Aspect" in Display Menu. ● Change the zoom setting. ("Just Fit Zoom" or "Manual Zoom" in Display Menu)	22 20 20
Menu is not displayed correctly.	● Restore the zoom ratio to "×1.00". ("Manual Zoom" in Display Menu) ● Set "Subtitle Position" in Display Menu to "0". ● Set "4:3 Aspect" in Display Menu to "Normal".	20 20 20
Auto zoom function does not work well.	● Turn off television's zoom function. ● Use the other preset aspect ratios or manual adjustment. ● Zoom function may not work well, especially in dark scenes and may not work depending on the type of disc.	— 20 —

Progressive video

There is ghosting when progressive is on.	● This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlaced output. Set "Video Output Mode" in Picture Menu to "480i". (Alternatively, press and hold [CANCEL] to switch to "480i".)	19
Pictures not in progressive output.	● Select "480p" in "Video Output Mode" in Picture Menu. ● The unit's VIDEO OUT or S-VIDEO OUT terminal outputs the interlaced signal even if "PRG" is displayed.	19 7
Closed captions not displayed.	● When progressive output is on, closed captions will not be displayed.	—

Listening to the radio

Distorted sound or noise is heard. **"ST" flickers or does not light.**	● Adjust the position of the FM or AM antenna. ● Use an outdoor antenna.	— 25
A beat sound is heard.	● Turn the television off or move it away from the unit.	—
A low hum is heard during AM broadcasts.	● Separate the antenna from other cables.	—

Unit displays

The display is dark.	● Select "Bright" in "FL Dimmer" in the "Others" tab.	22
"NOPLAY"	● You inserted a disc the unit cannot play; insert one it can. ● You inserted a blank disc. ● You inserted a disc that has not been finalized.	10 — —
"NODISC"	● You have not inserted a disc; insert one. ● You have not inserted the disc correctly; insert it correctly.	— 12
"F61"	● Check and correct the speaker cable connections. If this does not fix the problem, consult the dealer.	6
"DVD U11"	● Disc may be dirty. Wipe it clean.	10
"ERROR"	● Incorrect operation performed. Read the instructions and try again.	—
"DVD H□□" □□ stands for a number.	● Trouble may have occurred. The number following "H" depends on the status of the unit. Turn the unit off and then back on. Alternatively, turn the unit off, disconnect the AC power supply cord, and then reconnect it. ● If the service numbers fail to clear, note the service number and contact a qualified service person.	— —
U.S.A. and Canada **"W" is flashing.** (When using optional wireless accessory)	● There is no link between the main unit and the wireless accessory. Check that the wireless accessory is plugged into the AC outlet. ● Ensure that the digital transceiver is fully inserted into the slot of the main unit.	— —
"D.MIX" is flashing. DVD-A	● Down-mixing is the process of remixing the multiple-channel audio found on some discs into two channels. The disc contains single-channel or multiple-channel signals which may not be reproduced authentically.	—

Television displays

"⃠"	● The operation is prohibited by the unit or disc.	—
"Cannot display group xx, content xx"	● You are trying to display incompatible contents.	—
"This disc may not be played in your region"	● Only DVD-Video discs that include or have the same region number as the one on the rear panel of this unit can be played.	Cover page
No on-screen display.	● Select "On" in "On-Screen Messages" in the "Display" tab.	22

Specifications

AMPLIFIER SECTION

RMS Output Power: Dolby Digital Mode

Front Ch	110 W per channel (3 Ω), 1 kHz, 10 % THD
Surround Ch	90 W per channel (4 Ω), 1 kHz, 10 % THD
Center Ch	225 W per channel (6 Ω), 1 kHz, 10 % THD
Subwoofer Ch	225 W per channel (6 Ω), 100 Hz, 10 % THD
Total RMS Dolby Digital mode power	850 W

FTC Output Power: Dolby Digital Mode

Front Ch	40 W per channel (3 Ω), 120 Hz–20 kHz, 1 % THD
Surround Ch	70 W per channel (4 Ω), 120 Hz–20 kHz, 1 % THD
Center Ch	75 W per channel (6 Ω), 120 Hz–20 kHz, 1 % THD
Subwoofer Ch	65 W per channel (6 Ω), 45 Hz–120 Hz, 1 % THD
Total FTC Dolby Digital mode power	360 W

FM/AM TUNER, TERMINALS SECTION

Preset Memory	FM 15 stations AM/MW 15 stations
Frequency Modulation (FM)	
Frequency range	87.9–107.9 MHz (200-kHz step) 87.5–108.0 MHz (100-kHz step)
Sensitivity	2.5 µV (IHF)
S/N 26 dB	2.2 µV
Antenna terminals	75 Ω (unbalanced)
Amplitude Modulation (AM/MW)	
Frequency range	520–1710 kHz (10-kHz step)
AM Sensitivity S/N 20 dB at 1000 kHz	560 µV/m
Phone jack	
Terminal	Stereo, 3.5 mm (1/8″) jack
Front Music Port	
Sensitivity	100 mV, 4.7 kΩ
Terminal	Stereo, 3.5 mm (1/8″) jack

DISC SECTION

Discs played [8 cm (3″) or 12 cm (5″)]

(1) DVD (DVD-Video, DVD-Audio)
(2) DVD-RAM (DVD-VR, JPEG※4, 5)
(3) DVD-R (DVD-Video)
(4) DVD-RW (DVD-Video)
(5) +R/+RW (Video)
(6) CD, CD-R/RW [CD-DA, Video CD, SVCD※1, MP3※2, 5, WMA※3, 5, JPEG※4, 5, HighMAT Level 2 (Audio and Image)]

※1 Conforming to IEC62107
※2 MPEG-1 Layer 3, MPEG-2 Layer 3
※3 Windows Media Audio Ver.9.0 Class 2A
Not compatible with Multiple Bit Rate (MBR)
※4 Exif Ver 2.1 JPEG Baseline files
Picture resolution: between 320×240 and 6144×4096 pixels (Sub sampling is 4:2:2 or 4:2:0). Extremely long and thin pictures may not be displayed.
※5 The total combined maximum number of recognizable audio and picture contents and groups: 4000 audio and picture contents and 400 groups.

Pick up		
Wavelength (DVD/CD)		662/785 nm
Laser power (DVD/CD)	U.S.A.	CLASS II/CLASS I
	Others	CLASS 1/CLASS 1M
Audio output (Disc)		
Number of channels		5.1ch (FL, FR, C, SL, SR, SW)

VIDEO SECTION

Video system	NTSC
Composite video output	
Output level	1 Vp-p (75 Ω)
Terminal	Pin jack (1 system)
S-video output	
Y output level	1 Vp-p (75 Ω)
C output level	NTSC; 0.286 Vp-p (75 Ω)
Terminal	S terminal (1 system)
Component video output (480p/480i)	
Y output level	1 Vp-p (75 Ω)
P_B output level	0.7 Vp-p (75 Ω)
P_R output level	0.7 Vp-p (75 Ω)
Terminal	Pin jack (Y: green, P_B: blue, P_R: red) (1 system)

SPEAKER SECTION

Front speakers SB-FS440

Type	1 way, 1 speaker system (Bass reflex)
Speaker unit(s)	Impedance 3 Ω
Full range	6.5 cm (2 1/2″) Cone type
Input power (IEC)	110 W※ (Max)
Output sound pressure	80 dB/W (1.0 m)
Frequency range	102 Hz–25 kHz (−16 dB) 113 Hz–22 kHz (−10 dB)
Dimensions (W×H×D)	92 mm×273 mm×95.4 mm (3 5/8″×10 3/4″×3 3/4″)
Mass	0.84 kg (1.85 lbs)

Surround speakers SB-FS441

Type	1 way, 1 speaker system (Bass reflex)
Speaker unit(s)	Impedance 4 Ω
Full range	6.5 cm (2 1/2″) Cone type
Input power (IEC)	90 W※ (Max)
Output sound pressure	80 dB/W (1.0 m)
Frequency range	96 Hz–25 kHz (−16 dB) 120 Hz–22 kHz (−10 dB)
Dimensions (W×H×D)	92 mm×135 mm×95.4 mm (3 5/8″×5 5/16″×3 3/4″)
Mass	0.75 kg (1.65 lbs)

Center speaker SB-PC640

Type	1 way, 2 speaker system (Bass reflex)
Speaker unit(s)	Impedance 6 Ω
1. Full range	6.5 cm (2 1/2″) Cone type
2. Full range	6.5 cm (2 1/2″) Cone type
Input power (IEC)	250 W※ (Max)
Output sound pressure	84 dB/W (1.0 m)
Frequency range	105 Hz–25 kHz (−16 dB) 125 Hz–22 kHz (−10 dB)
Dimensions (W×H×D)	270 mm×92 mm×95.4 mm (10 5/8″×3 5/8″×3 3/4″)
Mass	1.3 kg (2.9 lbs)

Subwoofer SB-W440

Type	1 way, 1 speaker system (Bass reflex)
Speaker unit(s)	Impedance 6 Ω
Woofer	16 cm (6 1/2″) Cone type
Input power (IEC)	250 W (Max)
Output sound pressure	80 dB/W (1.0 m)
Frequency range	32 Hz–220 Hz (−16 dB) 38 Hz–180 Hz (−10 dB)
Dimensions (W×H×D)	183 mm×396 mm×267 mm (7 7/32″×15 19/32″×10 1/2″)
Mass	4 kg (8.8 lbs)

GENERAL

Power supply		
U.S.A. and Canada		AC 120 V, 60 Hz
Power consumption	Main unit	90 W
Dimensions (W×H×D)		430 mm×70 mm×439.2 mm (16 15/16″×2 3/4″×17 19/64″)
Mass	Main unit	4.7 kg (10.36 lbs)
Operating temperature range		+5 °C to +35 °C (+41 °F to +95 °F)
Operating humidity range		5 % to 90 % RH (no condensation)

Power consumption in standby mode	
U.S.A. and Canada	approx. 0.4 W
Others	approx. 0.9 W

※ Rating with low-cut filter equipped amplifier

Note

1. Specifications are subject to change without notice. Mass and dimensions are approximate.
2. Total harmonic distortion is measured by a digital spectrum analyzer.

Limited Warranty (ONLY FOR U.S.A.)

Panasonic Consumer Electronics Company,
Division of Panasonic Corporation of North America
One Panasonic Way Secaucus, New Jersey 07094

Panasonic Puerto Rico, Inc.
Ave. 65 de Infantería, Km. 9.5
San Gabriel Industrial Park, Carolina, Puerto Rico 00985

Panasonic Audio Products Limited Warranty

Limited Warranty Coverage
If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Puerto Rico, Inc. (collectively referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

Product or Part Name	Parts	Labor
Audio Products (except items listed below)	One (1) year	One (1) year
USB Reader-Writer, Personal Computer Card Adapters (in exchange for defective item)	One (1) year	Not Applicable
Accessories: Headphones, Cartridges, Microphones, Adapters	Ninety (90) days	Ninety (90) days
Rechargeable Batteries, DVD-R/-RAM Discs (in exchange for defective item)	Ten (10) days	Not Applicable
SD Memory Cards, Rechargeable Battery Packs (in exchange for defective item)	Ninety (90) days	Not Applicable

During the "Labor" warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must carry-in or mail-in your product during the warranty period. If non-rechargeable batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is". A purchase receipt or other proof of the original purchase date is required for warranty service.

Carry-In or Mail-In Service
For Carry-In or Mail-In Service in the United States call 1-800-211-PANA (1-800-211-7262) or visit Panasonic web site: http://www.panasonic.com
For assistance in Puerto Rico call Panasonic Puerto Rico, Inc. (787)-750-4300 or fax (787)-768-2910.

Limited Warranty Limits And Exclusions
This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or commercial use (such as in a hotel, office, restaurant, or other business), rental use of the product, service by anyone other than a Factory Servicenter or other Authorized Servicer, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, travel to and from the servicer, loss of media or images, data or other memory content. The items listed are not exclusive, but are for illustration only.) **ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.**

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the warrantor's Consumer Affairs Department at the addresses listed for the warrantor.

PARTS AND SERVICE WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY ARE YOUR RESPONSIBILITY.

Customer Services Directory

Obtain Product Information and Operating Assistance; locate your nearest Dealer or Servicenter; purchase Parts and Accessories; or make Customer Service and Literature requests by visiting our Web Site at:
http://www.panasonic.com/consumersupport
or, contact us via the web at:
http://www.panasonic.com/contactinfo
You may also contact us directly at:
1-800-211-PANA (7262),
Monday-Friday 9 am-9 pm; Saturday-Sunday 10 am-7 pm, EST.

For hearing or speech impaired TTY users, TTY : 1-877-833-8855

Accessory Purchases

Purchase Parts, Accessories and Instruction Books online for all Panasonic Products by visiting our Web Site at:
http://www.pasc.panasonic.com
or, send your request by E-mail to:
npcparts@us.panasonic.com
You may also contact us directly at:
1-800-332-5368 (Phone) 1-800-237-9080 (Fax Only) (Monday – Friday 9 am to 8 pm, EST.)
Panasonic Services Company
20421 84th Avenue South, Kent, WA 98032
(We Accept Visa, MasterCard, Discover Card, American Express, and Personal Checks)

For hearing or speech impaired TTY users, TTY : 1-866-605-1277

Service in Puerto Rico

Panasonic Puerto Rico, Inc.
Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985
Phone (787)750-4300, Fax (787)768-2910

Limited Warranty (ONLY FOR CANADA)

Panasonic Canada Inc.

PANASONIC/TECHNICS PRODUCT – LIMITED WARRANTY

Panasonic Canada Inc. warrants this product to be free from defects in material and workmanship and agrees to remedy any such defect for a period as stated below from the date of original purchase.

Technics Audio Product	**One (1) year, parts and labour**
Panasonic Audio & DVD Product	**One (1) year, parts and labour**
Accessories including rechargeable batteries	**Ninety (90) days**

In-home Service will be carried out only to locations accessible by roads and within 50 km of an authorized Panasonic service facility.

LIMITATIONS AND EXCLUSIONS

This warranty does not apply to products purchased outside Canada or to any product which has been improperly installed, subjected to usage for which the product was not designed, misused or abused, damaged during shipping, or which has been altered or repaired in any way that affects the reliability or detracts from the performance, nor does it cover any product which is used commercially. Dry cell batteries are also excluded from coverage under this warranty.
This warranty is extended to the original end user purchaser only. A purchase receipt or other proof of date of original purchase is required before warranty service is performed.
THIS EXPRESS, LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
IN NO EVENT WILL PANASONIC CANADA INC. BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES.
In certain instances, some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or the exclusion of implied warranties, so the above limitations and exclusions may not be applicable.

WARRANTY SERVICE

FOR PRODUCT OPERATION ASSISTANCE, please contact:

Our Customer Care Centre:	Telephone #:	(905) 624-5505
	1-800 #:	1-800-561-5505
	Fax #:	(905) 238-2360
	Email link:	“Contact Us” on www.panasonic.ca

FOR PRODUCT REPAIRS, please locate your nearest Authorized Servicentre at www.panasonic.ca :

Link : "Servicentres™ locator" under "Customer support"

Panasonic Factory Service:

Richmond British Columbia
Panasonic Canada Inc.
12111 Riverside Way
Richmond BC V6W 1K8
Tel: (604) 278-4211
Fax: (604) 278-5627

Mississauga Ontario
Panasonic Canada Inc.
5770 Ambler Drive
Mississauga ON L4W 2T3
Tel: (905) 624-8447
Fax: (905) 238-2418

IF YOU SHIP THE PRODUCT TO A SERVICENTRE
Carefully pack and send prepaid, adequately insured and preferably in the original carton.
Include details of the defect claimed, and proof of date of original purchase.

User memo:

DATE OF PURCHASE _____

DEALER NAME _____

DEALER ADDRESS _____

_____

TELEPHONE NUMBER _____

The model number and serial number of this product can be found on either the back or the bottom of the unit.
Please note them in the space provided below and keep for future reference.

MODEL NUMBER SC-HT440

SERIAL NUMBER _____

Listening caution

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion—and, most importantly, without affecting your sensitive hearing.

We recommend that you avoid prolonged exposure to excessive noise.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing.
Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:
- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:
- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

Manufactured under license from Dolby Laboratories.
"Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories.

"DTS" and "DTS Digital Surround" are registered trademarks of Digital Theater Systems, Inc.

Apparatus Claims of U.S. Patent Nos. 4,631,603, 4,577,216, and 4,819,098, licensed for limited viewing uses only.

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MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.

Windows Media, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.

Designed for Windows Media™

HIGH M·A·T AUDIO·IMAGE

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HDCD system manufactured under license from Pacific Microsonics, Inc. This product is covered by one or more of the following: In the USA: 5,479,168, 5,638,074, 5,640,161, 5,808,574, 5,838,274, 5,854,600, 5,864,311, 5,872,531, and in Australia: 669114, with other patents pending.

Accessories

Please check and identify the supplied accessories. Use numbers indicated in parentheses when asking for replacement parts. (Product numbers correct as of January 2006. These may be subject to change.)
Only for U.S.A.: To order accessories, refer to "Accessory Purchases" on page 33.
For other areas: To order accessories, call the dealer from whom you made your purchase.

☐ **1 Remote control**
(N2QAYZ000001)

☐ **2 Remote control batteries**

☐ **1 Video cable**
(K2KA2BA00001)

☐ **1 AM loop antenna**
(N1DAAAA00002)

☐ **1 FM indoor antenna**
(RSA0007-L)

☐ **1 AC power supply cord**
U.S.A. and Canada
(K2CB2CB00018)

Others
(K2CQ2CA00002)

☐ **2 Sheets of speaker cable stickers**

For areas except U.S.A. and Canada
☐ **1 Power plug adaptor**
(K2DA42E00001)

This product may receive radio interference caused by mobile telephones during use. If such interference is apparent, please increase separation between the product and the mobile telephone.

-If you see this symbol-

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

CAUTION - LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM. FDA 21 CFR / Class
CAUTION - CLASS 1M VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. IEC60825-1 +A2/ Class 1M
VARNING - KLASS 1M SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN DIREKT GENOM OPTISKT INSTRUMENT.
FORSIGTIG - SYNLIG OG USYNLIG LASERSTRÅLING KLASSE 1M. NÅR LÅGET ER ÅBENT. UNDGÅ AT SE LIGE PÅ MED OPTISKE INSTRUMENTER.
VARO! - AVATTAESSA OLET ALTTIINA LUOKAN 1M NÄKYVÄÄ JA NÄKYMÄTÖNTÄ. LASERSÄTEILYÄ. ÄLÄ KATSO OPTISELLA LAITTEELLA SUORAAN SÄTEESEEN.
VORSICHT - SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG KLASSE 1M, WENN ABDECKUNG GEÖFFNET. NICHT DIREKT MIT OPTISCHEN INSTRUMENTEN BETRACHTEN.
ATTENTION - RAYONNEMENT LASER VISIBLE ET INVISIBLE. CLASSE 1M, EN CAS D'OUVERTURE. NE PAS REGARDER DIRECTEMENT À L'AIDE D'INSTRUMENTS D'OPTIQUE.
注意 – ここを開くと可視及び不可視レーザ光が出ます。ビームを見たり、触れたりしないでください。
注意 - 打开时有可见及不可见激光辐射，避免光束照射。
GB7241. 1-2001/3B 类
RQLXS0075

(Inside of product)

For units with PX printed on the outer packaging
THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

(Side of product)

The laser product label has not been attached to this product for the U.S.A. and Canada.

For U.S.A.
Panasonic Consumer Electronics Company, Division of Panasonic Corporation of North America
One Panasonic Way Secaucus,
New Jersey 07094
http://www.panasonic.com

Panasonic Puerto Rico, Inc.
Ave. 65 de Infantería, Km. 9.5
San Gabriel Industrial Park, Carolina,
Puerto Rico 00985

For Canada
Panasonic Canada Inc.
5770 Ambler Drive
Mississauga, Ontario
L4W 2T3
www.panasonic.ca

For others
Matsushita Electric Industrial Co., Ltd.
Corporate Management Division for the Americas
Sales Office for North America
Tokyo Panasonic Sales Section
32nd Floor, World Trade Center 4-1,
Hamamatsu-cho, 2-Chome, Minato-Ku,
Tokyo 105-6132, Japan

Panasonic Marketing Europe G.M.B.H.
Wiesbaden N.
(a Division of Panasonic Marketing G.M.B.H.)
Military Sales Department
6200 Wiesbaden-Biebrich, Hagenauerstr. 43
Germany

En

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